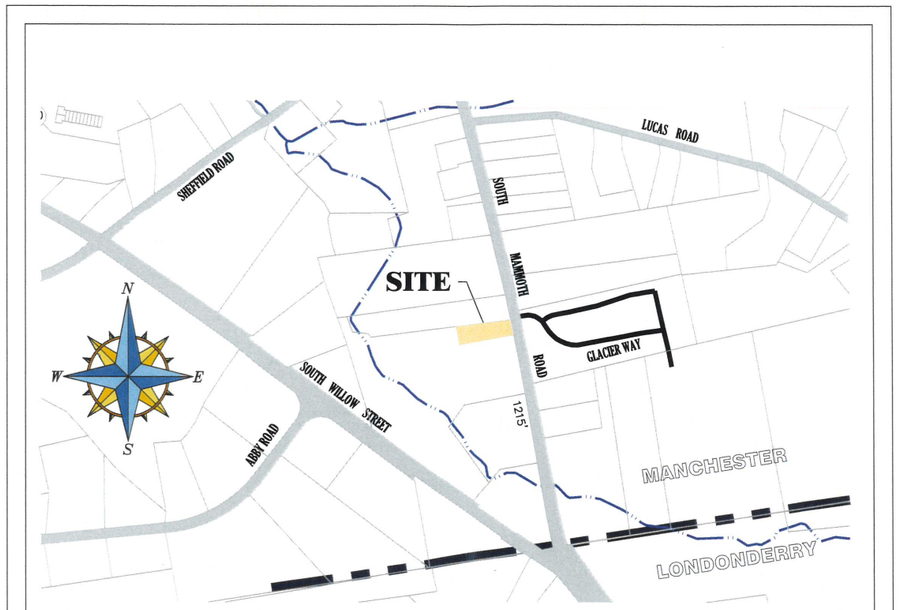
PROPOSED TOWN HOUSE DEVELOPMENT

Goldeneye Properties, LLC

Tax Map 796 / Lots 12 & 13

South Mammoth Road ~ Manchester, N.H.



LOCATION MAP
SCALE: 1" = 400'

SHEET INDEX

Property Owner

Patricia K. King
524 South Main Street
Manchester, N.H. 03102
Book 6344 / Page 1408

Applicant

Goldeneye Properties, LLC
30 Temple Street ~ Suite 504
Nashua, N.H. 03060

PROJECT SURVEYOR

David M. O'Hara & Associates
51 Scobie Road
New Boston, N.H. 03070
(603) 666-5542

WETLAND SCIENTIST

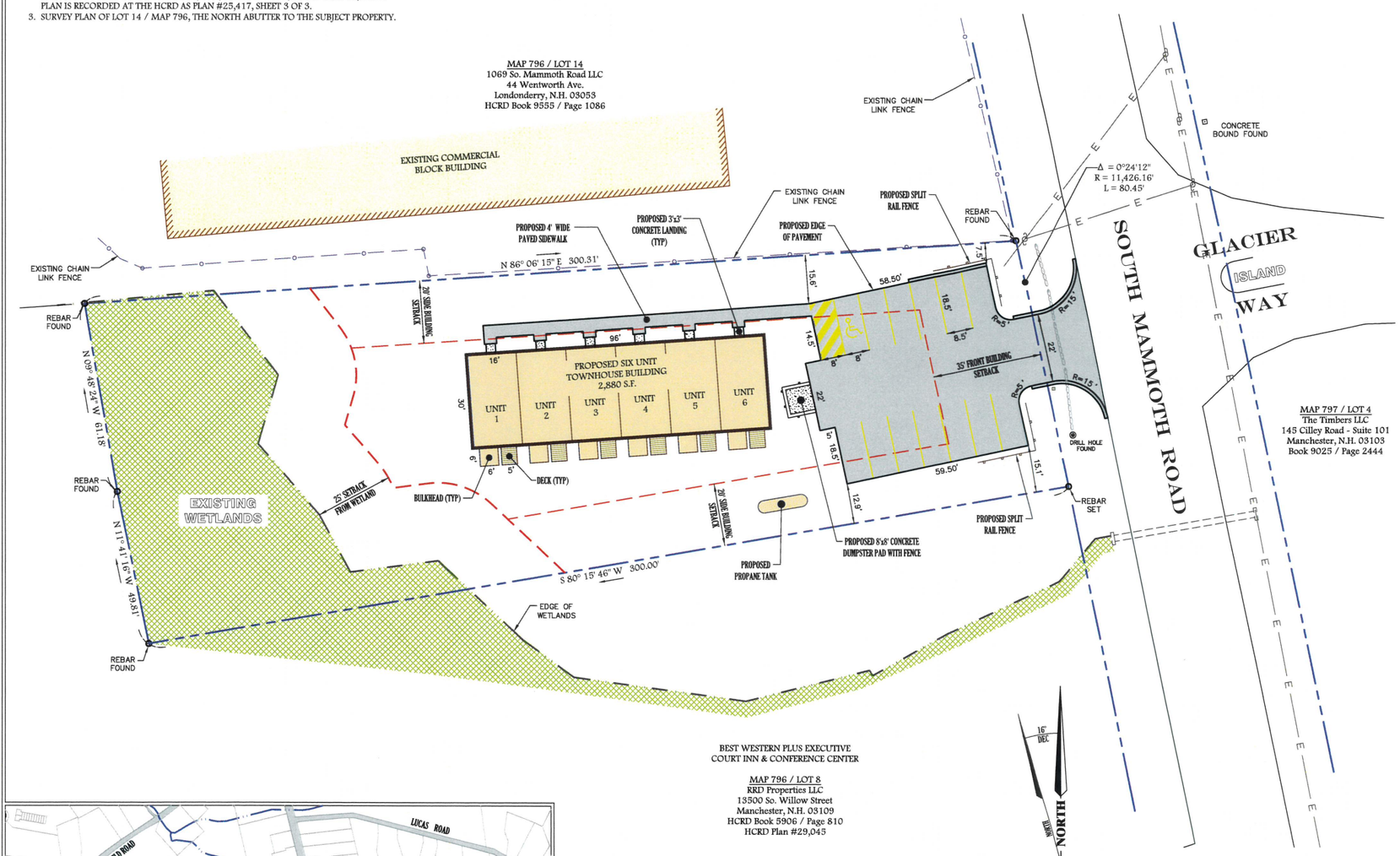
Aspen Environmental Services, LLC
831 Valley Road
Washington, N.H. 03280
(603) 848-5606

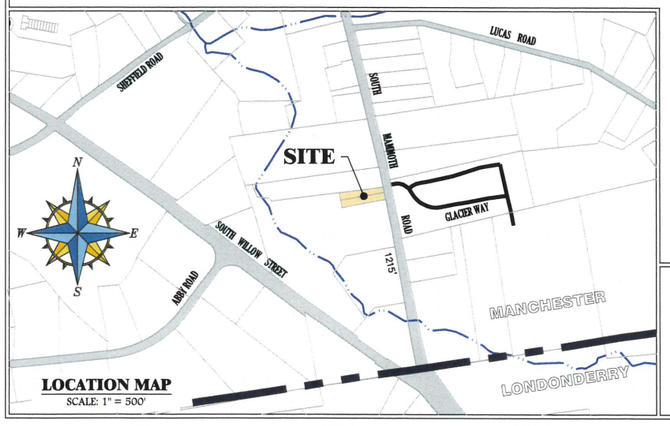
PROJECT ENGINEER

A.C.Engineering
& Consulting
Civil Engineering & Land Planning
43 Bear Hill Road
East Washington, N.H. 03280
Phone: (603) 325-5114
acengineer@gsinet.net

PLAN REFERENCES

1. SUBDIVISION/CONSOLIDATION PLAN FOR RONALD L. DOUCET, S. WILLOW ST. & S. MAMMOTH ROAD, MANCHESTER, N.H., SCALE: 1" = 60', APRIL 30, 1993, REVISED 2/18/98, BY MARTIN MICCIO, RLS. PLAN IS RECORDED AT THE HCRD AS PLAN #29,045.
2. PROPERTY KNOWN AS GRENIER INDUSTRIAL PARK EXTENSION, PREPARED FOR MANCHESTER HOUSING AUTHORITY SITUATED IN THE CITY OF MANCHESTER, N.H. PREPARED BY R.S.L. LAYOUT & DESIGN, INC., SCALE: 1" = 100', DATED SEPT. 20, 1991. PLAN IS RECORDED AT THE HCRD AS PLAN #25,417, SHEET 3 OF 3.
3. SURVEY PLAN OF LOT 14 / MAP 796, THE NORTH ABUTTER TO THE SUBJECT PROPERTY.





LOCATION MAP
SCALE: 1" = 500'

LEGEND

- PROPERTY LINE
- BUILDING SETBACKS
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- PROPOSED RANCH RAIL FENCE
- EXISTING OVERHEAD ELECTRIC
- STONE WALL
- WETLAND
- UTILITY POLE

ZBA VARIANCES

THE FOLLOWING VARIANCES WERE GRANTED BY THE MANCHESTER ZBA ON 09/08/2022 TO CONSTRUCT A SIX UNIT TOWNHOUSE DWELLING IN THE INDUSTRIAL ZONING DISTRICT (CASE #2022-118):

1. SECTION 5.10(A): SINGLE FAMILY ATTACHED TOWNHOUSE DWELLINGS.
2. SECTION 6.02: MINIMUM LOT FRONTAGE AND WIDTH(2 COUNTS).
3. SECTION 6.03(C): SIDE YARD SETBACK.
4. SECTION 10.07(G): LANDSCAPING.
5. SECTION 8.29(B): ACCESSORY STRUCTURES AND USES.

ZONING TABLE

INDUSTRIAL DISTRICT (IND)		
• MIN. LOT SIZE (BUILDABLE)	25,000 S.F.	22,190 S.F.*
• MINIMUM FRONTAGE	100'	80'*
• FRONT BUILDING SETBACK	35'	85'
• SIDE BUILDING SETBACK	20'	24'
• REAR BUILDING SETBACK	20'	114'
• MAXIMUM COVERAGE	75%	26%
• MAXIMUM HEIGHT	50'	
• MAXIMUM STORIES	4	2
• BUILDING/FLOOR AREA RATIO	1	0.20

* VARIANCE GRANTED FOR MINIMUM LOT SIZE

PARKING & LOADING

USE	REQUIREMENT	PROPOSED	REQUIRED
RESIDENTIAL MULTI-FAMILY	2 PER UNIT	6 UNITS	12 SPACES

13 SPACES PROVIDED INCLUDING 1 VAN ACCESSIBLE SPACE
TYPICAL PARKING SPACE = 8.5' x 18.5'
VAN ACCESSIBLE SPACE = 8' x 18.5' WITH 8' x 18.5' ACCESS AISLE

NOTES

1. THE PURPOSE OF THIS PLAN IS TO SHOW IMPROVEMENTS TO TAX MAP 796 / LOTS 12 & 13 FOR THE CONSTRUCTION OF A SIX UNIT TOWN HOUSE COMPLEX.
2. OWNER OF RECORD FOR LOTS 12 & 13: PATRICIA K. KING, 524 SOUTH MAIN STREET, MANCHESTER, N.H. 03102, BOOK 6344 / PAGE 1408.
3. PROPERTY IS LOCATED IN THE INDUSTRIAL DISTRICT.
4. PROPERTY IS NOT LOCATED WITHIN A FLOOD ZONE.
5. TOPOGRAPHIC CONTOURS DERIVED FROM ON GROUND SURVEY BY DAVID M. O'HARA & ASSOCIATES, 51 SCOBIE ROAD, NEW BOSTON, N.H. 03070.
6. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE.
7. MUNICIPAL WATER, SANITARY SEWER AND GAS ARE AVAILABLE AT MAMMOTH ROAD.
8. ALL WORK MUST CONFORM TO THE CITY OF MANCHESTER DEPT. OF PUBLIC WORKS STANDARD OF SPECIFICATIONS AND ANY WORK WITHIN THE CITY RIGHT-OF WAY REQUIRES AN EXCAVATION PERMIT.
9. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE, THE PROPERTY OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE CITY.
10. IN ACCORDANCE WITH THE SUBDIVISION AND SITE PLAN REGULATIONS OF THE CITY OF MANCHESTER AND RSA 676:13, ALL IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPLETED, INSPECTED, AND APPROVED BY THE CITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
11. ALL CONDITIONS SUBSEQUENT TO APPROVAL SHALL BE COMPLETED WITHIN TWO YEARS OF THE DATE OF FINAL APPROVAL.

OWNER/DEVELOPER CERTIFICATION

IT IS HEREBY AGREED THAT, AS THE OWNER/DEVELOPER OF THE PROPERTY, I WILL CONSTRUCT THE PROJECT AS APPROVED AND AS SHOWN ON THE ENCLOSED SET OF PLANS. FURTHER, I AGREE TO MAINTAIN THE SITE IMPROVEMENTS FOR THE DURATION OF THE USE.

BENJAMIN MERCURI
GOLDENEYE PROPERTIES, LLC

12/5/22
DATE

STATE OF NEW HAMPSHIRE — AARON J. WECHSLER — No. 250 — CERTIFIED WETLAND SCIENTIST

CERTIFIED WETLAND SCIENTIST

WETLAND NOTE

WETLAND IDENTIFICATION WAS PERFORMED IN SEPTEMBER 2022 BY AARON WECHSLER (CWS #250) IN ACCORDANCE WITH THE METHODOLOGY PRESENTED IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1), JANUARY 1987 AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.

STATE OF NEW HAMPSHIRE — No. 257 — DAVID M. O'HARA — LICENSED LAND SURVEYOR

SIGNATURE

LICENSED LAND SURVEYOR

SURVEYOR NOTE

I HEREBY CERTIFY THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY AND HAS A MAXIMUM ERROR OF CLOSURE OF 1:10,000 ON ALL PROPERTY LINES IN AND BORDERING THE SUBJECT PROPERTY.

David M. O'Hara — 12/5/2022

LICENSED LAND SURVEYOR — DATE

TOWN APPROVAL BLOCK

STATE OF NEW HAMPSHIRE — ANTHONY T. COSTELLO No. 10020 LICENSED PROFESSIONAL ENGINEER

A.C. Engineering & Consulting
Civil Engineering & Land Planning
43 Rear Hill Road
East Washington, N.H. 03280
Phone: (603) 325-5114
acengineer@gsmtel.net

NO.	DATE	DESCRIPTION	BY

APPLICANT:
Goldeneye Properties, LLC
30 Temple Street ~ Suite 304
Nashua, N.H. 03060

OWNER:
Patricia K. King
524 South Main Street
Manchester, N.H. 03102
Book 6344 / Page 1408

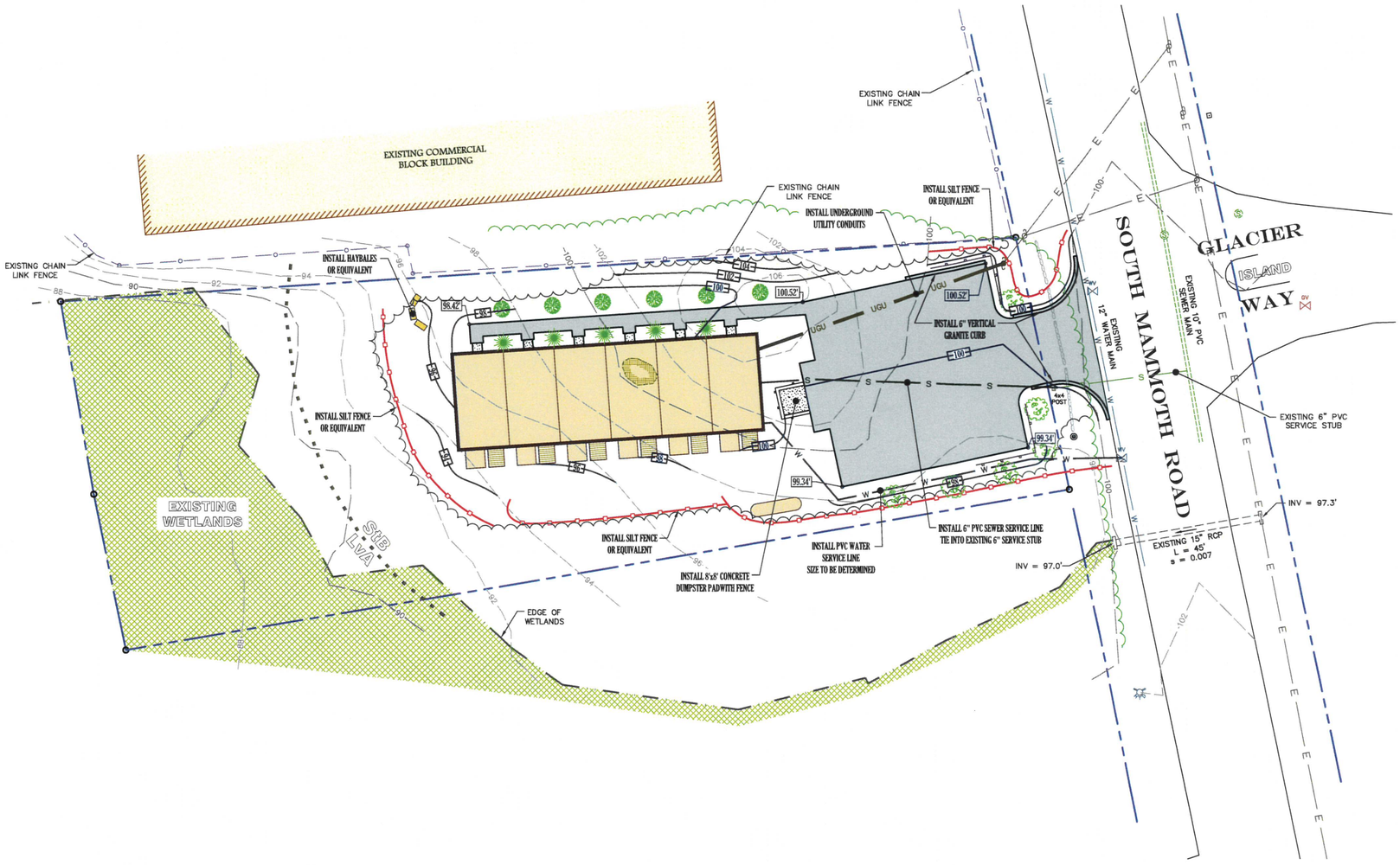
SITE PLAN
Town House
Tax Map 796 / Lot 12
South Mammoth Road, Manchester ~ N.H.

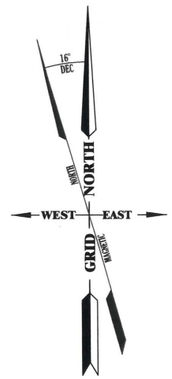
SCALE: 1" = 20 ft.

DATE: 11/8/22

DWG: 2244-BASE

JN2244 SHEET 1 OF 8





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LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	STONE WALL	
	WETLAND	
	SOIL BOUNDARY	
	EDGE OF PAVEMENT	
	2' CONTOUR	
	10' CONTOUR	
E E	OVERHEAD ELECTRIC	
℄	UTILITY POLE	℄
	UNDERGROUND UTILITIES	UGU UGU
	SEWER MAIN	
S S	SEWER SERVICE	S S
S	SEWER MANHOLE	
W W	WATER MAIN	
	WATER SERVICE	W W
WV	WATER VALVE	
	TREELINE	
	DRAIN PIPE	
	EROSION CONTROL	
GV	GAS VALVE	
	REBAR	
	DRILL HOLE	
	CONCRETE BOUND	

SOIL LEGEND

LvA	LEICESTER-WALPOLE COMPLEX 0-3% SLOPES, STONY POORLY DRAINED
StB	SCITUATE FINE SANDY LOAM 3-8% SLOPES MODERATELY WELL DRAINED

SOILS DERIVED FROM NRCS WEB SOIL SURVEY

DIG SAFE
811 OR 1-888-344-7233 DIG SAFE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

WETLAND NOTE

WETLAND IDENTIFICATION WAS PERFORMED IN SEPTEMBER 2022 BY AARON WECHSLER (CWS #250) IN ACCORDANCE WITH THE METHODOLOGY PRESENTED IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1), JANUARY 1987 AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.

STATE OF NEW HAMPSHIRE
AARON J. WECHSLER
No. 250
CERTIFIED WETLAND SCIENTIST

CERTIFIED WETLAND SCIENTIST

OWNER/DEVELOPER CERTIFICATION

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BENJAMIN MERCURI
GOLDENEYE PROPERTIES, LLC

DATE 12/5/22

TOWN APPROVAL BLOCK

STATE OF NEW HAMPSHIRE — ANTHONY T. COSTELLO No. 10020 LICENSED PROFESSIONAL ENGINEER

A.C. Engineering & Consulting
Civil Engineering & Land Planning
43 Bear Hill Road
East Washington, N.H. 03280
Phone: (603) 325-5114
acengineer@gsmnet.net

NO.	DATE	DESCRIPTION	BY

APPLICANT: Goldeneye Properties, LLC, 30 Temple Street ~ Suite 504, Nashua, N.H. 03060

OWNER: Patricia K. King, 524 South Main Street, Manchester, N.H. 03102, Book 6344 / Page 1408

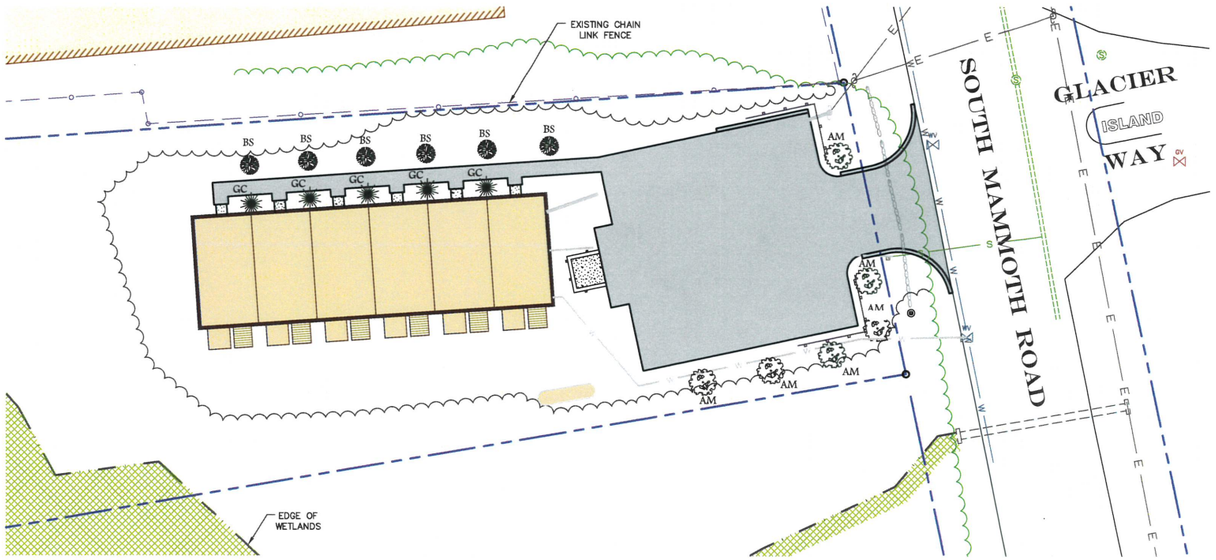
GRADING & UTILITY PLAN

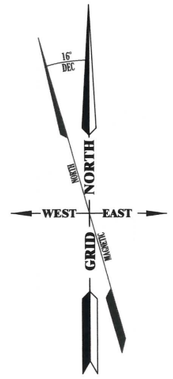
Town House
Tax Map 796 / Lot 12
South Mammoth Road, Manchester ~ N.H.

SCALE: 1" = 20 ft.

DATE: 11/8/22

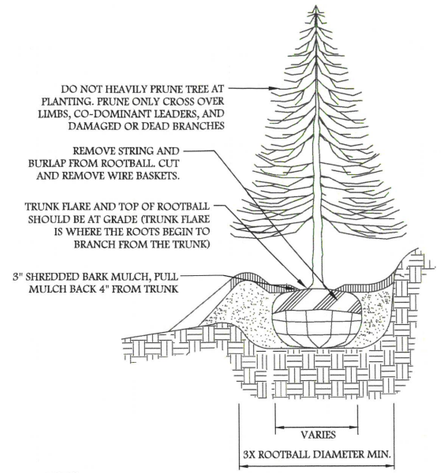
DWG: 2244~BASE





EVERGREEN PLANTING

NOT TO SCALE



NOTES:
1. DO NOT STAKE EVERGREEN TREES.
2. LOAM FOR BACKFILLING SHALL BE AMENDED AS REQUIRED BY LANDSCAPE ARCHITECT.
3. TAMP BACKFILL SOIL AROUND ROOTBALL FIRMLY TO MINIMIZE ROOTBALL SHIFT.
4. TREE TO BE SET PLUMB, AFTER SETTLEMENT
5. ALL NURSERY TAGS, TAPE, AND SIMILAR MATERIALS SHALL BE REMOVED.

PLANTING SCHEDULE

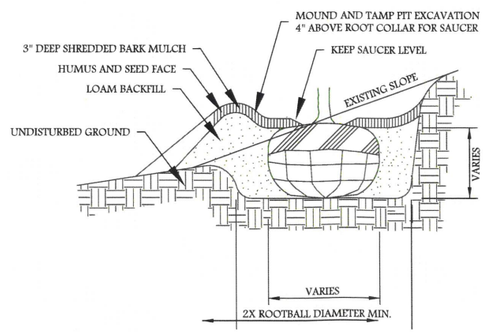
SYMBOL	COMMON NAME	BOTANICAL NAME	QUANTITY	PLANTING SIZE
		TREES		
BS	BLUE SPRUCE	PICEA PUNGENS	6	6' HEIGHT
AM	ARMSTRONG MAPLE	ACER X FREEMANII 'ARMSTRONG'	6	3" CALIPER
GC	GOLD MOP CYPRESS	PHOENIX ROEBELENII	5	3 GALLON

NOTES:

1. ALL PLANTING BEDS SHALL BE MULCHED WITH 2"-3" OF SHREDDED PINE BARK MULCH. SAMPLE OF MULCH TO BE PROVIDED FOR APPROVAL PRIOR TO SPREADING.
2. ALL TREES THAT ARE NOT IN PLANTING BEDS SHALL BE SURROUNDED WITH 3' DIAMETER MULCH BEDS. SHRUBS PLANTED IN A GROUP ARE TO BE MULCHED AS A GROUP AND NOT INDIVIDUALLY.
3. ALL TAGS, ROPE, PLASTIC FLAGGING, WIRE, ETC. ARE TO BE REMOVED AFTER PLANTING.
4. ALL TREES AND SHRUBS ARE TO BE FERTILIZED WITH AN ALL PURPOSE SLOW RELEASE FERTILIZER AFTER THE FIRST GROWING SEASON, NOT AT THE TIME OF PLANTING.
5. ALL PLANT MATERIAL TO BE WATERED AT TIME OF PLANTING.
6. NO CONSTRUCTION MATERIALS, EQUIPMENT, VEHICLES, OR TEMPORARY SOIL DEPOSITS SHALL BE LOCATED WITHIN THE DRIPLINE OF TREES THAT ARE TO BE PRESERVED. PROTECTIVE BARRIERS SUCH AS SILT FENCING OR CONSTRUCTION FENCING SHALL BE INSTALLED AROUND EACH PLANT AND/OR GROUPS OF PLANTS THAT ARE TO REMAIN ONSITE. THE APPLICANT SHALL BE RESPONSIBLE FOR REPLACING ANY TREES PROPOSED TO BE RETAINED WHICH HAVE BEEN DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES.

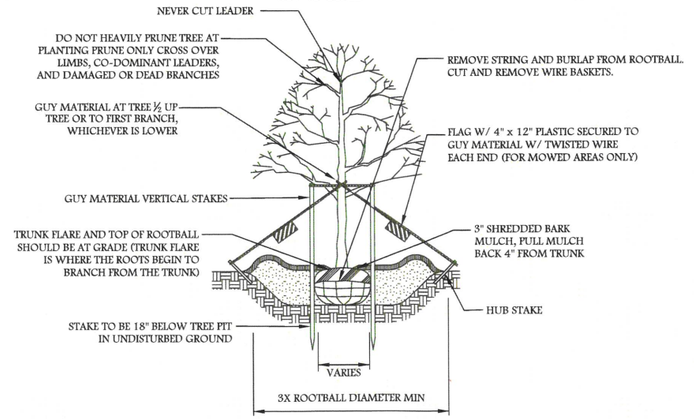
TREE PLANTING ON SLOPES > 4:1

NOT TO SCALE



DECIDUOUS TREE PLANTING

NOT TO SCALE



NOTES:

1. GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECT. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING.
2. TYPICALLY ONLY TREES WITH A 3" OR GREATER CALIPER NEED TO BE STAKED. TREES WITH LESS THAN A 3" CALIPER NEED TO BE STAKED ONLY AS REQUIRED BY LANDSCAPE ARCHITECT.
3. ONLY WRAP TREE TRUNKS AS REQUIRED BY LANDSCAPE ARCHITECT.
4. TREE SHALL BE SET PLUMB, AFTER SETTLEMENT.
5. LOAM FOR BACKFILLING SHALL BE AMENDED AS REQUIRED BY LANDSCAPE ARCHITECT.
6. CITY TREES PLANTED ON PRIVATE PROPERTY, ADJACENT TO A PUBLIC RIGHT-OF-WAY, NEED TO BE PLANTED A MINIMUM OF 10 FEET FROM THE EDGE OF THE CITY SIDEWALK.
7. ALL NURSERY TAGS, TAPE, AND SIMILAR MATERIALS SHALL BE REMOVED.

DIG SAFE

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LANDSCAPE PLAN

Town House
Tax Map 796 / Lot 12
South Mammoth Road, Manchester ~ N.H.

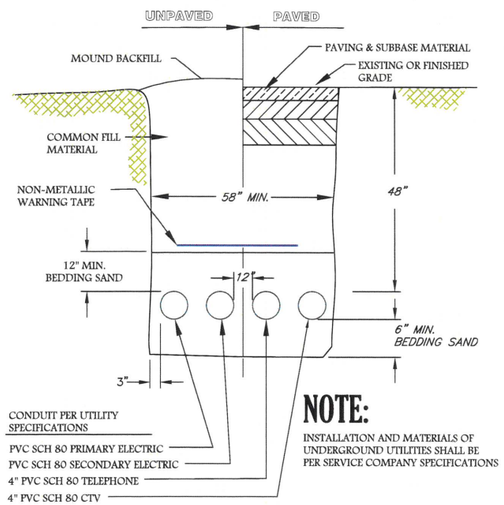
SCALE: 1" = 20 ft.

DATE: 11/8/22

DWG: 2244~BASE

UTILITY TRENCH DETAIL

–NOT TO SCALE–

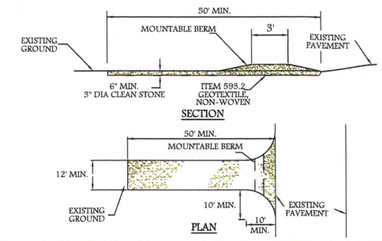


NOTE:

INSTALLATION AND MATERIALS OF UNDERGROUND UTILITIES SHALL BE PER SERVICE COMPANY SPECIFICATIONS

STABILIZED CONSTRUCTION ENTRANCE

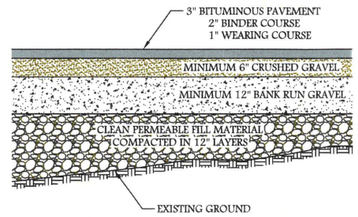
NOT TO SCALE



THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC ROADS . THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE, INCREASING THE LENGTH, AND TIRE WASHDOWN INTO WASHOUT PITS OR APPROVED SEDIMENT TRAPS BEFORE EXITING THE STONE .

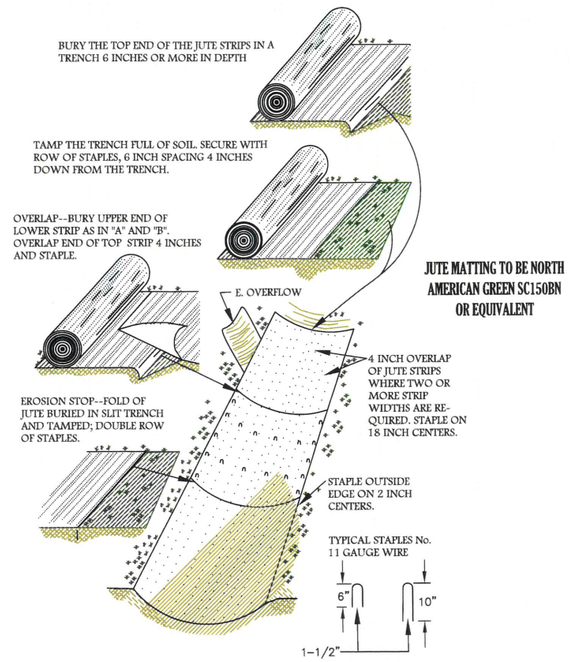
PAVEMENT DETAIL

NOT TO SCALE



DETAIL FOR STABLIZING WITH JUTE MATTING

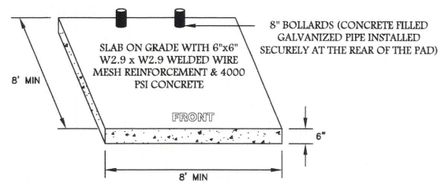
–NOT TO SCALE–

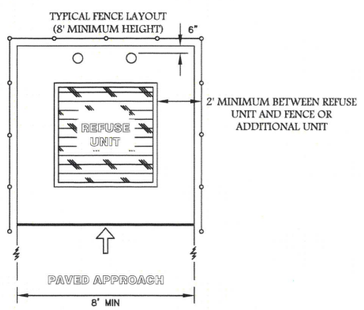


JUTE MATTING TO BE NORTH AMERICAN GREEN SC150BN OR EQUIVALENT

DUMPSTER PAD DETAIL

NOT TO SCALE



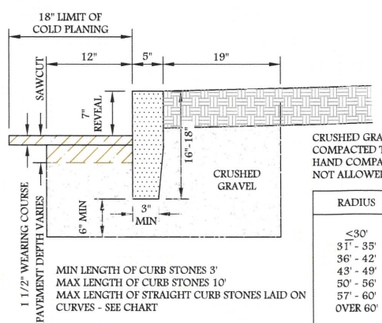


NOTES:

1. DUMPSTER PADS AND ASSOCIATED SCREENING SHALL BE PLACED WHERE THE REFUSE BINS CAN BE UNLOADED WITH A SINGLE TURNING MOVEMENT WITH A 35' FRONT LOADING TRUCK. THE WIDTH OF THE GATE SHOULD BE TAKEN INTO ACCOUNT WHEN REVIEWING TURNING MOVEMENTS.
2. GATES SHALL BE PROVIDED UNLESS THE DUMPSTER IS BLOCKED FROM VIEW FROM THE PUBLIC RIGHT-OF-WAY AND ABUTTING PROPERTIES BY BUILDINGS OR WALLS.
3. TRASH CONTAINERS SHALL BE LOCATED A MINIMUM DISTANCE OF 25' FROM ANY DRAINAGE STRUCTURE, INLET OR STORMWATER FACILITY.

VERTICAL GRANITE CURB DETAIL

NOT TO SCALE



CRUSHED GRAVEL TO BE COMPACTED TO 95% MIN HAND COMPACTION IS NOT ALLOWED

RADIUS	MAX LENGTH
	CURVED CURB
<30'	5'
31' - 35'	6'
36' - 42'	7'
43' - 49'	8'
50' - 56'	9'
57' - 60'	10'
OVER 60'	

MIN LENGTH OF CURB STONES 3'
MAX LENGTH OF CURB STONES 10'
MAX LENGTH OF STRAIGHT CURB STONES LAID ON CURVES - SEE CHART

ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

FINISH SURFACE AND TOLERANCES FOR VERTICAL GRANITE CURB

AREA	FINISH SURFACE	TOLERANCE
TOP	5" WIDE OR AS OTHERWISE SHOWN, SAWN TRUE PLANE.	+⅛" TO +⅛"
	FRONT AND BACK ARRIS LINES PITCHED STRAIGHT AND PARALLEL.	+⅛" TO +⅛"
FRONT FACE	RIGHT ANGLE TO TOP, APPROXIMATELY TRUE PLANE. NO DRILL HOLES SHOWING IN TOP 10"	+1" TO -½"
BACK FACE EXPOSED	PLANE PARALLEL WITH FRONT FACE. STRAIGHT SPLIT TO 1½" BELOW EXPOSED SURFACE. NO LARGER THAN ¼" SEGMENT OF DRILL HOLES SHOWING IN ARRIS LINES.	+1" TO -1"
CONCEALED	BELOW 1½" FROM EXPOSED SURFACE.	+1½" TO -1½"
BOTTOM	APPROXIMATELY PARALLEL TO TOP. MINIMUM WIDTH: 3"	SEE PLANS
ENDS EXPOSED PORTION	SQUARE WITH PLANES OF TOP AND FACE	
JOINTS EXPOSED	OPTIMUM WIDTH: 1"	
CONCEALED	TO BREAK BACK NO MORE THAN 4"	+¾" TO -¾"

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43 Bear Hill Road
East Washington, N.H. 03280
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NO.	DATE	DESCRIPTION	BY

APPLICANT: Goldeneye Properties, LLC, 30 Temple Street ~ Suite 504, Nashua, N.H. 03060

OWNER: Patricia K. King, 524 South Main Street, Manchester, N.H. 03102, Book 6344 / Page 1408

CONSTRUCTION DETAILS 1

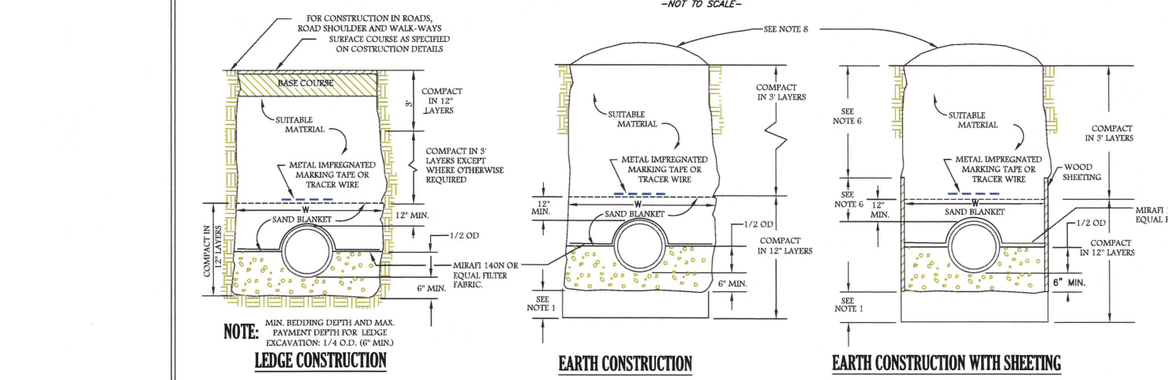
Town House
Tax Map 796 / Lot 12
South Mammoth Road, Manchester ~ N.H.

DATE: 11/8/22

DWG: 2244~BASE

TYPICAL SANITARY SEWER TRENCH DETAIL

–NOT TO SCALE–



NOTES:

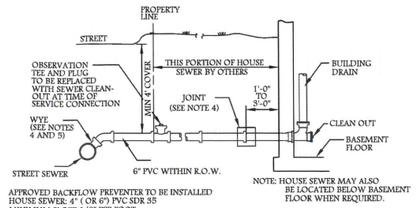
1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. SEE ALSO NOTE 4. BEDDING: CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 STONE SIZE NO. 67.

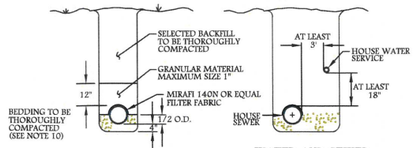
100% PASSING	1 INCH SCREEN
90-100% PASSING	3/4 INCH SCREEN
20- 55% PASSING	3/8 INCH SCREEN
0 -10% PASSING	# 4 SIEVE
0 - 5% PASSING	# 8 SIEVE

   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.
2. SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 90-100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A # 200 SIEVE. BLANKET MAY BE OMITTED FOR CAST-IRON, DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
3. FILTER FABRIC SHALL BE INSTALLED ABOVE PIPE MIRAFI 140N OR EQUAL.
4. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED.
5. BASE COURSE, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS.
6. WOOD SHEETING, IF REQUIRED, WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 5 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
7. W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
8. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
9. NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES STANDARDS REQUIRE TEN FOOT SEPARATION BETWEEN WATER AND SEWER MAINS. A DEVIATION FROM THE REQUIRED TEN FOOT SEPARATION SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS AND BUILDING FOUNDATIONS, PROVIDED THAT THE SEWER IS CONSTRUCTED AS FOLLOWS:
   A) SEWER PIPES SHALL BE CLASS 52 DUCTILE IRON;
   B) JOINTS SHALL BE PRESSURE TESTED WITH ZERO LEAKAGE AT 25 PSI FOR GRAVITY SEWERS, AND 1½ TIMES WORKING PRESSURE FOR FORCE MAINS.
10. WHERE WATERLINES AND SEWER MAINS CROSS, THEY SHALL CROSS AS NEARLY PERPENDICULAR AS POSSIBLE AND SHALL BE CONSTRUCTED AS FOLLOWS:
    A) SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST NINE FEET HORIZONTALLY FROM THE WATER MAIN;
    B) SEWER PIPE JOINTS SHALL BE PRESSURE TESTED WITH ZERO LEAKAGE AT 25 PSI FOR GRAVITY SEWERS, AND 1½ TIMES WORKING PRESSURE FOR FORCE MAINS; AND
    C) VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL NOT BE LESS THAN 18".
11. ALL SEWERS AT 8 PERCENT OR GREATER SLOPE SHALL HAVE TRENCH DAMS INSTALLED.

SANITARY SEWER SERVICE DETAIL

–NOT TO SCALE–





NOTES:

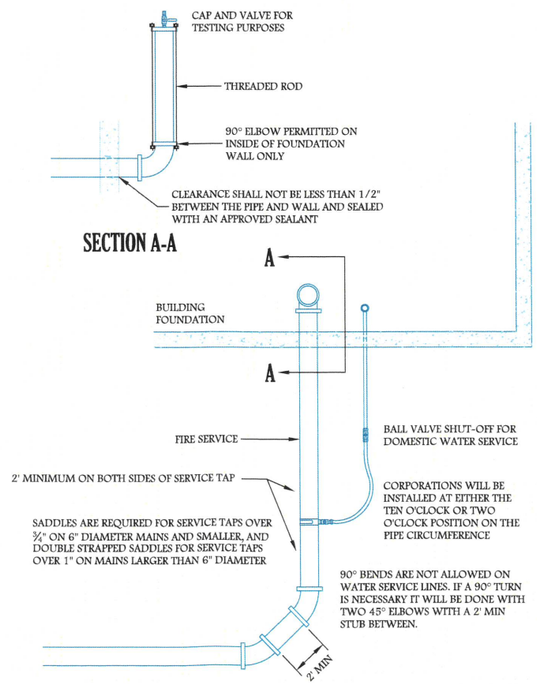
1. MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE FOUR INCHES.
2. PIPE AND JOINT MATERIALS
   A) PVC SEWER PIPE AND FITTINGS SHALL CONFORM TO ASTM D-3034 OR ASTM F679 (SDR 35 MINIMUM). JOINTS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212, TYPE SHALL BE PUSH-ON, BELL AND SPIGOT.
   B) PIPE AND JOINT MATERIALS
      (1) DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA):
      AWWA C151/A21.51 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND MOLDS FOR WATER OR OTHER LIQUIDS.
      AWWA C150/A21.50 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 FOR DUCTILE IRON CASTINGS.
      (2) JOINTS SHALL BE OF MECHANICAL TYPE, JOINTS AND GASKETS SHALL CONFORM TO A21.11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE FITTINGS.
3. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
4. JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
5. WHERE WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS INSTRUCTIONS USING A BOLTED, CLAMPED, OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL.
6. PIPE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED, AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH THE APPROPRIATE MECHANICAL DEVICES. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.
7. TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)
   A) AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
   B) THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEAN OUT WITH A FLASHLIGHT.
   C) DRY FLUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE. LEAKAGE OBSERVED IN ANY OF THE ABOVE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER-TIGHTNESS.
8. ILLEGAL CONNECTION: NOTHING BUT SANITARY WASTE FLOW FROM HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS OR SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE, OR GROUND WATER, SHALL NOT BE PERMITTED.
9. HOUSE WATER SERVICE SHOULD NOT BE LAID IN SAME TRENCH AS SEWER SERVICE, BOTH WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE HOUSE SEWER AS SHOWN.
10. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67

    100% PASSING 1 INCH SCREEN
    90-100% PASSING 3/4 INCH SCREEN
    20-55% PASSING 3/8 INCH SCREEN
    0-10% PASSING #4 SIEVE
    0-5% PASSING #8 SIEVE

    WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH SHALL BE USED.
11. LOCATION: THE LOCATION OF THE WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS MATERIAL ROD OR PIPE SHALL BE PLACED OVER THE WYE TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPE FINDER.
12. CHIMNEYS: NOT PERMITTED

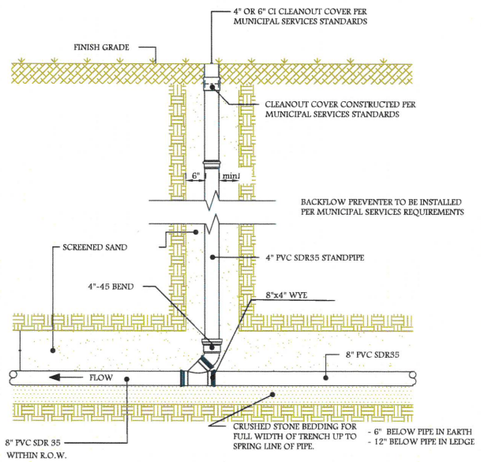
SERVICE DETAIL

NOT TO SCALE



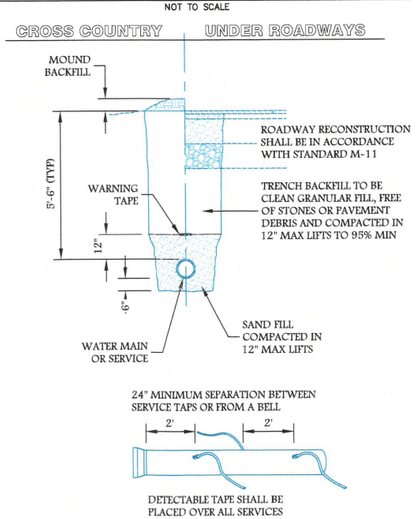
SEWER SERVICE CLEANOUT

–NOT TO SCALE–



WATER MAIN/SERVICE INSTALLATION

NOT TO SCALE



ANTHONY T. COSTELLO No. 10020 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE

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NO.	DATE	DESCRIPTION	BY

APPLICANT: Goldeneye Properties, LLC, 30 Temple Street ~ Suite 504, Nashua, N.H. 03060

OWNER: Patricia K. King, 524 South Main Street, Manchester, N.H. 03102, Rook 6344 / Page 1408

CONSTRUCTION DETAILS 2

Town House

Tax Map 796 / Lot 12

South Mammoth Road, Manchester ~ N.H.

DATE: 11/8/22

DWG: 2244~BASE

TEMPORARY VEGETATION

CONSIDERATIONS

- PROPER SEEDBED PREPARATION AND THE USE OF QUALITY SEED ARE IMPORTANT IN THIS PRACTICE. FAILURE TO CAREFULLY FOLLOW SOUND AGRONOMIC RECOMMENDATIONS WILL OFTEN RESULT IN AN INADEQUATE STAND OF VEGETATION THAT PROVIDES LITTLE OR NO EROSION CONTROL.
- NUTRIENTS AND PESTICIDES USED TO ESTABLISH AND MAINTAIN VEGETATION MUST BE MANAGED TO PROTECT SURFACE WATER AND GROUNDWATER QUALITY.
- TEMPORARY SEEDING SHOULD BE USED EXTENSIVELY IN SENSITIVE AREAS (E.G., POND AND LAKE WATERSHEDS, STEEP SLOPES, STREAMBANKS).
- LATE FALL SEEDING MAY FAIL, RESULTING IN INADEQUATE OVERWINTER EROSION PROTECTION, AS WELL AS POTENTIAL SURFACE STABILITY PROBLEMS ASSOCIATED WITH SPRING THAW AND SPRING RUNOFF EVENTS. IF FULL STABILIZATION IS NOT ACHIEVED BY LATE FALL, OTHER STABILIZATION MEASURES SUCH AS MULCHING SHOULD BE IMPLEMENTED.

MAINTENANCE REQUIREMENTS

- TEMPORARY SEEDING SHOULD BE INSPECTED WEEKLY AND AFTER ANY RAINFALL EXCEEDING ½ INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. TEMPORARY SEEDING SHOULD ALSO BE INSPECTED JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
- BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS. IF IT IS TOO LATE IN THE PLANTING SEASON TO APPLY ADDITIONAL SEED, THEN OTHER TEMPORARY STABILIZATION MEASURES SHOULD BE IMPLEMENTED
- AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.
- IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS SHOULD BE RESEEDED, WITH OTHER TEMPORARY MEASURES (E.G., MULCH) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

SPECIFICATIONS

SITE PREPARATION:

- INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
- GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
- RUNOFF SHOULD BE DIVERTED FROM THE SEEDED AREA.
- ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHOULD INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.

SEEDBED PREPARATION:

- STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
- WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
- IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING SEASON.
  - •• APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER(1) (N-P2O5-K2O) OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET).
  - •• FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE(2) NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF A SURFACE WATER BODY. **THESE LIMITATIONS ARE REQUIREMENTS FOR ANY WATER BODY PROTECTED BY THE COMPREHENSIVE SHORELAND PROTECTION ACT.**

SEEDING:

- SELECT SEED FROM RECOMMENDATIONS IN TABLE 4-1.
- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM ¼ TO ½ INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10 % WHEN HYDROSEEDING.
- TEMPORARY SEEDING SHOULD TYPICALLY OCCUR PRIOR TO SEPTEMBER 15TH.
- AREAS SEEDED BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE.
- VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.

(1) Low phosphate fertilizer is defined by the Comprehensive Shoreland Protection Act as less than 2% phosphorus. The University of New Hampshire Cooperative Extension has found through soil tests that NH's soils have ample phosphorus and recommend low phosphorus fertilizers with 0% - 1% phosphorus such as 3:1:3 or 10:0:10 N:P:K. They discourage the use of imbalanced fertilizers.

(2) Slow release fertilizers must be at least 50% slow release nitrogen components, which means that half of the nitrogen will not be immediately available. Typically, it takes 2-24 weeks for all slow-release nitrogen to become available. Slow-release fertilizers do not necessarily reduce nitrogen loading. Nitrogen fertilizers are necessary for grass lawns, however, according to the UNH Cooperative Extension, nitrogen fertilizers for lawns that consist of legume and clover are not necessary.

TABLE 4-1

SEED MIXTURES FOR PERMANENT VEGETATION

SPECIES	PER ACRE BUSHELS (BU) OR POUNDS (LBS)	PER 1000 S.F.	REMARKS
WINTER RYE	2 BU OR 112 LBS	2.5 LBS	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	2.5 BU OR 80 LBS	2 LBS	BEST FOR SPRING SEED-INGS. SEED NO LATER THAN MAY 15 FOR SUM-MER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYEGRASS	40 LBS	1 LBS	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEAR-ANCES ARE IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. COVER THE SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYEGRASS	30 LBS	0.7 LBS	GOOD COVER WHICH IS LONGER LASTING THAN ANNUAL RYEGRASS. SEED BETWEEN APRIL 1 AND JUNE 1 AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. MULCHING WILL ALLOW SEEDING THROUGHOUT THE GROWING SEASON. SEED TO A DEPTH OF APPROXIMATELY 0.5 INCH.

TABLE 4-2

SEED MIXTURES FOR PERMANENT VEGETATION

MIXTURE	SPECIES	LBS/AC	LBS/1000SF
A	TALL FESCUE	20	0.45
	CREEPING RED FESCUE	20	0.45
	REDTOP	2	0.05
	TOTAL	42	0.95
B(3)	TALL FESCUE	15	0.35
	CREEPING RED FESCUE	10	0.25
	CROWN VETCH	15	0.35
	OR		
	FLATPEA	30	0.75
	TOTAL	40 OR 55	0.95 OR 1.35
C(3)	TALL FESCUE	20	0.45
	CREEPING RED FESCUE	20	0.45
	BIRDSFOOT TREFOIL	8	0.20
	TOTAL	48	1.10
D(3)	BIRDSFOOT TREFOIL	10	0.25
	REDTOP	5	0.10
	REED CANARYGRASS(1)	15	0.35
	TOTAL	30	0.70
E	TALL FESCUE	20	0.45
	FLATPEA	30	0.75
	TOTAL	50	1.20
F	CREEPING RED FESCUE(2)	50	1.15
	KENTUCKY BLUEGRASS	50	1.15
	TOTAL	100	2.30
G	TALL FESCUE(2)	150	3.60

TABLE 4-3

SEED MIXTURE SELECTION BASED ON SOILS

USE	SEED MIXTURE SEE TABLE	SOIL DRAINAGE			
		DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS & FILLS	A	FAIR	GOOD	GOOD	FAIR
BORROWS &	B	POOR	GOOD	FAIR	FAIR
DISPOSAL AREAS	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	FAIR	GOOD	EXCELLENT
	E	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY	A	GOOD	GOOD	GOOD	FAIR
SPILLWAYS & OTHER CHANNELS	B	GOOD	EXCELLENT	EXCELLENT	FAIR
WITH FLOWING WATER	C	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS,	A	GOOD	GOOD	GOOD	FAIR
ODD AREAS, UNUSED LAND, &	B	GOOD	GOOD	FAIR	POOR
LOW INTENSITY USE	C	GOOD	EXCELLENT	EXCELLENT	FAIR
RECREATIONAL SITES	D	FAIR	GOOD	GOOD	EXCELLENT
PLAY AREAS & ATHLETIC FIELDS	B	FAIR	EXCELLENT	EXCELLENT	SEE NOTE 2
(TOPSOIL ESSENTIAL FOR GOOD TURF)	D	FAIR	EXCELLENT	EXCELLENT	SEE NOTE 2
GRAVEL PIT	CONSULT WITH USDA NATURAL RESOURCE CONSERVATION SERVICE				

NOTES:

1. REED CANARY GRASS IS ON THE INVASIVE SPECIES WATCH LIST DUE TO ITS RAPID, AGGRESSIVE GROWTH AND ITS ABILITY TO MOVE INTO WETLANDS AND OUT-COMPETE OTHER DESIRABLE WETLAND PLANTS. CAUTION SHOULD BE USED WHEN PLANTED NEAR WETLANDS.
2. FOR HEAVY USE ATHLETIC FIELDS, CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.
3. THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION RECOMMENDS RED CLOVER TO SUBSTITUTE FOR CROWN VETCH OR BIRDSFOOT TREFOIL IF THEY ARE GOING TO BE MOWED TO A HEIGHT OF 4 INCHES OR LESS. RED CLOVER (ALSIKE VARIETY) SHOULD BE SEEDED AT A RATE OF 20 POUNDS PER ACRE.

PERMANENT VEGETATION

CONSIDERATIONS

- PROPER SEEDBED PREPARATION AND THE USE OF QUALITY SEED ARE IMPORTANT IN THIS PRACTICE. FAILURE TO CAREFULLY FOLLOW SOUND AGRONOMIC RECOMMENDATIONS WILL OFTEN RESULT IN AN INADEQUATE STAND OF VEGETATION THAT PROVIDES LITTLE OR NO EROSION CONTROL.
- NUTRIENTS AND PESTICIDES USED TO ESTABLISH AND MAINTAIN VEGETATION MUST BE MANAGED TO PROTECT SURFACE WATER AND GROUNDWATER QUALITY.

MAINTENANCE REQUIREMENTS

- PERMANENT SEEDED AREAS SHOULD BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTIONS, MAINTENANCE, AND CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
- SEEDED AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION, WITH MOWING HEIGHT AND FREQUENCY DEPENDENT ON TYPE OF GRASS COVER.
- BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
- AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.
- IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS SHOULD BE RESEEDED, WITH OTHER TEMPORARY MEASURES (E.G., MULCH) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

SPECIFICATIONS

SITE PREPARATION:

- INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
- GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
- RUNOFF SHOULD BE DIVERTED FROM THE SEEDED AREA.
- ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHOULD INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.

SEEDBED PREPARATION:

- WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
- REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE, CLODS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
- INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
- IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING SEASON.
  - •• APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER(1) (N-P2O5-K2O) OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET).
  - •• FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE(2) NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER. **THESE LIMITATIONS ARE REQUIREMENTS FOR ANY WATER BODY PROTECTED BY THE COMPREHENSIVE SHORELAND PROTECTION ACT.**

SEEDING:

- SELECT A SEED MIXTURE IN TABLE 4-2 THAT IS APPROPRIATE FOR THE SOIL TYPE AND MOISTURE CONTENT AS FOUND AT THE SITE, FOR THE AMOUNT OF SUN EXPOSURE AND FOR LEVEL OF USE. SELECT SEED FROM RECOMMENDATIONS IN TABLE 4-3.
- INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE AND AMOUNT OF INOCULANT.
- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM ¼ TO ½ INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
- WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
- SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST. WHEN CROWN VETCH IS SEEDED IN LATER SUMMER, AT LEAST 85% OF THE SEED SHOULD BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING PRACTICE," AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
  - •• TEMPORARY SEEDING SHOULD TYPICALLY OCCUR PRIOR TO SEPTEMBER 15TH.
  - •• AREAS SEEDED BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE.
- VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION, AND COMPLETE PERMANENT SEED STABILIZATION DURING THE NEXT GROWING SEASON.

HYDROSEEDING:

- WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO REMOVE SURFACE STONES LARGER THAN 2 INCHES IN DIAMETER.
- SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY).
- LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.
- SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING.

(1) Low phosphate fertilizer is defined by the Comprehensive Shoreland Protection Act as less than 2% phosphorus. The University of New Hampshire Cooperative Extension has found through soil tests that NH's soils have ample phosphorus and recommend low phosphorus fertilizers with 0% - 1% phosphorus such as 3:1:3 or 10:0:10 N:P:K. They discourage the use of imbalanced fertilizers.

(2) Slow release fertilizers must be at least 50% slow release nitrogen components, which means that half of the nitrogen will not be immediately available. Typically, it takes 2-24 weeks for all slow-release nitrogen to become available. Slow-release fertilizers do not necessarily reduce nitrogen loading. Nitrogen fertilizers are necessary for grass lawns, however, according to the UNH Cooperative Extension, nitrogen fertilizers for lawns that consist of legume and clover are not necessary.

TEMPORARY & PERMANENT MULCHING

CONSIDERATIONS

- WITHIN 100 FEET OF STREAMS, WETLANDS AND IN LAKE WATERSHEDS, TEMPORARY MULCH SHOULD BE APPLIED **WITHIN 7 DAYS OF EXPOSING SOIL OR PRIOR TO ANY STORM EVENT.**
- AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED SHOULD BE MULCHED IMMEDIATELY FOLLOWING SEEDING.
- AREAS THAT CANNOT BE SEEDED WITHIN THE GROWING SEASON SHOULD BE MULCHED FOR OVER-WINTER PROTECTION. THE AREA SHOULD BE SEEDED AT THE BEGINNING OF THE NEXT GROWING SEASON.
- MULCH ANCHORING SHOULD BE USED ON SLOPES WITH GRADIENTS GREATER THAN 5% IN LATE FALL (PAST SEPTEMBER 15), AND OVER-WINTER (SEPTEMBER 15 - MAY 15).
- PERMANENT MULCH CAN BE USED IN CONJUNCTION WITH TREE, SHRUB, VINE, AND GROUND COVER PLANTINGS.

MAINTENANCE REQUIREMENTS

- ALL TEMPORARY MULCHES MUST BE INSPECTED PERIODICALLY AND IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION OR DISPLACEMENT OF THE MULCH. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHOULD BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGES OCCUR, REPAIR ANY DAMAGE TO THE SLOPE AND RE-INSTALL OR REPLACE NETTING AS NECESSARY. INSPECTIONS SHOULD TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED (85% SOIL SURFACE UNIFORMLY COVERED WITH HEALTHY STAND OF GRASS).
- EROSION CONTROL MIX MULCH USED FOR TEMPORARY STABILIZATION SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED.
- WHERE PERMANENT MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED. PERMANENT MULCHED AREAS SHOULD BE INSPECTED AT LEAST ANNUALLY, AND AFTER EACH LARGE RAINFALL (2.5 INCHES OR MORE IN A 24-HOUR PERIOD). ANY REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY. WHERE EROSION CONTROL MIX HAS BEEN USED, PLACE ADDITIONAL MIX ON TOP OF THE MULCH TO MAINTAIN THE RECOMMENDED THICKNESS. WHEN THE MULCH IS DECOMPOSED, CLOGGED WITH SEDIMENT, ERODED OR INEFFECTIVE, IT MUST BE REPLACED OR REPAIRED.
- IF THE MULCH NEEDS TO BE REMOVED, SPREAD IT OUT INTO THE LANDSCAPE.

SPECIFICATIONS

GENERAL:

- APPLY MULCH PRIOR TO A STORM EVENT. THIS IS APPLICABLE IN EXTREMELY SENSITIVE AREAS SUCH AS WITHIN 100 FEET OF LAKES, PONDS, RIVERS, STREAMS, AND WETLANDS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
- MULCHING SHOULD BE COMPLETED WITHIN THE FOLLOWING SPECIFIED TIME PERIODS FROM ORIGINAL SOIL EXPOSURE:
  - •• WITHIN 100 FEET OF RIVERS AND STREAMS, WETLANDS, AND IN LAKE AND POND WATERSHEDS, THE TIME PERIOD SHOULD BE NO GREATER THAN 7 DAYS. THIS 7-DAY LIMIT SHOULD BE REDUCED FURTHER DURING WET WEATHER PERIODS.
  - •• IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS, THE LENGTH OF TIME VARYING WITH SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS. OTHER STATE OR LOCAL RESTRICTIONS MAY ALSO APPLY.
- THE CHOICE OF MATERIALS FOR MULCHING SHOULD BE BASED ON SITE CONDITIONS, SOILS, SLOPE, FLOW CONDITIONS, AND TIME OF YEAR.

HAY OR STRAW MULCHES:

- ORGANIC MULCHES INCLUDING HAY AND STRAW SHOULD BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS.
- APPLICATION RATE SHOULD BE 2 BALES (70-90 POUNDS) PER 1000 SQUARE FEET OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75 TO 90 % OF THE GROUND SURFACE.
- HAY OR STRAW MULCH SHOULD BE ANCHORED TO PREVENT DISPLACEMENT BY WIND OR FLOWING WATER, USING ONE OF THE FOLLOWING METHODS:
  - •• NETTING: INSTALL JUTE, WOOD FIBER, OR BIODEGRADABLE PLASTIC NETTING OVER HAY OR STRAW TO ANCHOR IT TO THE SOIL SURFACE. INSTALL NETTING MATERIAL ACCORDING TO MANUFACTURER'S RECOMMENDATION. NETTING SHOULD BE USED JUDICIOUSLY, AS WILDLIFE CAN BECOME ENTANGLED IN THE MATERIALS.
  - •• TACKIFIER: APPLY POLYMER OR ORGANIC TACKIFIER TO ANCHOR HAY OR STRAW MULCH. APPLICATION RATES VARY BY MANUFACTURER: TYPICALLY 40-60 LBS/ACRE FOR POLYMER MATERIAL, AND 80-120 LBS/ACRE FOR ORGANIC MATERIAL. LIQUID MULCH BINDERS ARE ALSO TYPICALLY APPLIED HEAVIER AT EDGES, IN VALLEYS, AND AT CRESTS THAN OTHER AREAS.
- WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON), IT SHOULD BE APPLIED TO A DEPTH OF FOUR INCHES (150-200 POUNDS OF HAY OR STRAW PER 1000 SQUARE FEET, OR DOUBLE STANDARD APPLICATION RATE). SEEDING CANNOT GENERALLY BE EXPECTED TO GROW UP THROUGH THIS DEPTH OF MULCH AND WILL BE SMOTHERED. IF VEGETATION IS DESIRED, THE MULCH WILL NEED TO BE REMOVED IN THE SPRINGTIME AND THE AREA SEEDED AND MULCHED.

WOOD CHIPS OR BARK:

- WOOD CHIPS OR GROUND BARK SHOULD BE APPLIED TO A THICKNESS OF 2 TO 6 INCHES.
- WOOD CHIPS OR GROUND BARK SHOULD BE APPLIED AT A RATE OF 10 TO 20 TONS PER ACRE OR 460 TO 920 POUNDS PER 1,000 SQUARE FEET.

EROSION CONTROL MIX:

- EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
- COMPOSITION OF THE EROSION CONTROL MIX SHOULD BE AS FOLLOWS:
  - •• EROSION CONTROL MIX SHOULD CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHOULD MEET THE FOLLOWING STANDARDS:
  - •• THE ORGANIC MATTER CONTENT SHOULD BE BETWEEN 25 AND 65%, DRY WEIGHT BASIS.
  - •• PARTICLE SIZE BY WEIGHT SHOULD BE 100% PASSING A 3" SCREEN, 90% TO 100% PASSING A 1-INCH SCREEN, 70% TO 100% PASSING A 0.75-INCH SCREEN, AND A MAXIMUM OF 30% TO 75%, PASSING A 0.25-INCH SCREEN.
  - •• THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
  - •• THE MIX SHOULD NOT CONTAIN SILTS, CLAYS OR FINE SANDS.
  - •• SOLUBLE SALTS CONTENT SHOULD BE < 4.0 MMHOS/CM.
  - •• THE PH SHOULD BE BETWEEN 5.0 AND 8.0.
- THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS.
- THE BARRIER MUST BE A MINIMUM OF 12" HIGH, AS MEASURED ON THE UPHILL SIDE OF THE BARRIER, AND A MINIMUM OF TWO FEET WIDE.

EROSION CONTROL BLANKETS AND MATS:

- MATS ARE MANUFACTURED COMBINATIONS OF MULCH AND NETTING DESIGNED TO PROTECT AGAINST EROSION, AND ALSO TO RETAIN SOIL MOISTURE AND MODIFY SOIL TEMPERATURE. SEE FURTHER SPECIFICATIONS UNDER "TEMPORARY EROSION BLANKETS."

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NO.	DATE	DESCRIPTION	BY

APPLICANT: Goldeneye Properties, LLC, 30 Temple Street ~ Suite 504, Nashua, N.H. 03060

OWNER: Patricia K. King, 524 South Main Street, Manchester, N.H. 03102, Book 6344 / Page 1408

EROSION CONTROL SPECIFICATIONS 1

Town House
Tax Map 796 / Lot 12
South Mammoth Road, Manchester ~ N.H.

DATE: 11/8/22

DWG: 2244~BASE

SOIL STOCKPILING

CONSIDERATIONS

- SOIL STOCKPILES SHOULD BE SITED ON THE SITE IN COMPLIANCE WITH ALL PERMIT CONDITIONS GOVERNING SETBACKS FROM ADJACENT PROPERTY LINES AND WATER RESOURCES (INCLUDING WETLANDS).
- SOIL AND EROSION CONTROL PRACTICES AT STOCKPILES SHOULD BE REGULARLY INSPECTED AND SHOULD BE ADJUSTED IMMEDIATELY TO RESPOND TO ONGOING CONSTRUCTION OPERATIONS, AS THE DELIVERY OF NEW MATERIALS OR THE REMOVAL OF MATERIALS FOR INCORPORATION INTO THE WORK MAY REQUIRE MODIFICATION AND UPDATING OF THE PROTECTIVE MEASURES TO KEEP THEM EFFECTIVE.

MAINTENANCE REQUIREMENTS

- INSPECT ALL SOIL STOCKPILES IMMEDIATELY AFTER STORM EVENTS AND AT THE FREQUENCIES SPECIFIED IN THE PROJECT EROSION AND SEDIMENT CONTROL PLAN AND IN APPLICABLE PERMITS. AT A MINIMUM, INSPECT WEEKLY DURING WET WEATHER PERIODS TO VERIFY THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND FUNCTIONING PROPERLY.
- REPAIR AND/OR REPLACE PERIMETER CONTROLS AND STOCKPILE COVERINGS AS NEEDED TO KEEP THEM FUNCTIONING PROPERLY.

SPECIFICATIONS

GENERAL:
- LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES, AND INLETS.
- PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS, OR OTHER APPROVED PRACTICE.
- STOCKPILES SHOULD BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED IN THE NEW HAMPSHIRE STORMWATER MANUAL, TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.
- IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.
- PLACE BAGGED MATERIALS ON PALLETS AND UNDER COVER.

PROTECTION OF INACTIVE STOCKPILES:
- INACTIVE SOIL STOCKPILES SHOULD BE COVERED WITH ANCHORED TARPS OR PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED AND MULCH OR OTHER TEMPORARY STABILIZATION PRACTICE) AND TEMPORARY PERIMETER SEDIMENT BARRIERS AT ALL TIMES.
- INACTIVE STOCKPILES OF CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE AGGREGATE MATERIALS, AND OTHER SIMILAR MATERIALS SHOULD BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY SHOULD ALSO BE COVERED.

PROTECTION OF ACTIVE STOCKPILES:
- ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY LINEAR SEDIMENT BARRIERS PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
- WHEN A STORM EVENT IS PREDICTED, STOCKPILES SHOULD BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

DIVERSION CHANNEL

CONSIDERATIONS

- TEMPORARY DIVERSIONS MUST BE STABILIZED IMMEDIATELY FOLLOWING INSTALLATION TO PREVENT EROSION OF THE DIVERSION ITSELF.
- THE GRADIENT ALONG THE FLOW PATH MUST HAVE A POSITIVE GRADE TO ASSURE DRAINAGE, BUT SHOULD NOT BE SO STEEP AS TO RESULT IN EROSION DUE TO HIGH VELOCITY CHANNEL FLOW. IF SUCH EROSION OCCURS DURING CONSTRUCTION, CORRECTIVE ACTION SHOULD BE TAKEN TO STABILIZE THE CHANNEL AND BERM, FLATTEN THE GRADIENT OF THE CHANNEL, OR OTHERWISE ELIMINATE THE CAUSE OF EROSION.
- DIVERSIONS ARE TYPICALLY INSTALLED USING MATERIAL AVAILABLE ON THE SITE AND CAN USUALLY BE CONSTRUCTED WITH EQUIPMENT NEEDED FOR SITE GRADING. THE USEFUL LIFE OF THE PRACTICE CAN BE EXTENDED BY STABILIZING THE DIKE WITH VEGETATION.
- TEMPORARY DIVERSION DIKES ARE OFTEN USED AS A PERIMETER CONTROL IN ASSOCIATION WITH A SEDIMENT TRAP OR A SEDIMENT BASIN, OR A SERIES OF SEDIMENT-TRAPPING FACILITIES, ON MODERATE TO LARGE CONSTRUCTION SITES. IF INSTALLED PROPERLY AND IN THE FIRST PHASE OF GRADING, MAINTENANCE COSTS ARE VERY LOW.
- DIVERSIONS THAT ARE LOCATED UPSLOPE OF A CONSTRUCTION AREA SHOULD NOT THEMSELVES BE LOCATED BELOW HIGH SEDIMENT-PRODUCING AREAS UNLESS LAND TREATMENT PRACTICES OR STRUCTURAL MEASURES, DESIGNED TO PREVENT DAMAGING ACCUMULATIONS OF SEDIMENT IN THE CHANNELS, ARE INSTALLED WITH OR BEFORE THE DIVERSIONS. (THE EXCEPTION IS WHERE THE DIVERSION IS USED TO DIVERT SEDIMENT-LADEN WATER TO A SEDIMENTATION FACILITY.)
- WHERE DIVERSIONS CARRY CONCENTRATED FLOWS, THEIR OUTLETS MAY REQUIRE TREATMENT OR STRUCTURES TO DISSIPATE ENERGY AND RE-DISPERSE THE FLOW OR RE-CREATE SHEET FLOW INTO UNDISTURBED UPLAND AREAS, WHERE THE RUNOFF CAN BE ABSORBED. UNTREATED, SEDIMENT-LADEN RUNOFF SHOULD NOT BE DISCHARGED TO SUCH UNDISTURBED AREAS.

MAINTENANCE REQUIREMENTS

- THE MEASURE SHOULD BE INSPECTED WEEKLY AND AFTER EVERY STORM OF ½ INCH OR MORE IN A 24-HOUR PERIOD. REPAIRS SHOULD BE MADE TO THE BERM (DIKE), FLOW CHANNEL, OUTLET OR SEDIMENT TRAPPING FACILITY, AS NECESSARY.
- DIVERSION DIKES USED TO TRAP SEDIMENT SHOULD BE INSPECTED AND CLEANED OUT AFTER EVERY SIGNIFICANT STORM.
- DAMAGES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
- IF INSPECTION INDICATES VEGETATION HAS NOT BEEN ESTABLISHED OR HAS BEEN DAMAGED, THE AFFECTED AREAS MUST BE RESEEDED IMMEDIATELY.
- ONCE DIVERSIONS HAVE BEEN STABILIZED, THEY SHOULD BE MOWED PERIODICALLY TO MAINTAIN A HEALTHY VEGETATIVE COVER, BUT THE GRASS SHOULD NOT BE CUT SHORTER THAN 4 INCHES. DIVERSION RIDGES CAN BE HAZARDOUS TO MOW, AND EQUIPMENT OPERATORS SHOULD BE MADE AWARE OF THIS POTENTIAL HAZARD.

SPECIFICATIONS

DESIGN SPECIFICATIONS:
- DIVERSIONS SHOULD BE DESIGNED TO MEET THE CRITERIA IN THE FOLLOWING TABLE:

CONSTRUCTION SPECIFICATIONS:
- TEMPORARY DIVERSION DIKES SHOULD BE INSTALLED AS AN INITIAL STEP IN THE LAND-DISTURBING ACTIVITY. THEY MUST BE FUNCTIONAL PRIOR TO EXPOSURE OF SOILS IN THE AREA BEING SERVED BY THE DIVERSION.
- ALL DITCHES OR GULLIES WITHIN THE LIMITS OF THE DIVERSION SHOULD BE FILLED, AND TREES AND OTHER OBSTRUCTIONS SHOULD BE REMOVED BEFORE OR AS PART OF THE CONSTRUCTION.
- THE DIKE SHOULD BE LOCATED TO MINIMIZE DAMAGES BY CONSTRUCTION OPERATIONS AND TRAFFIC.
- WHERE THE DIVERSION CROSSES AN UNDERGROUND UTILITY OR OTHER STRUCTURE, MEASURES SHOULD BE EMPLOYED TO PREVENT DAMAGE TO THE UTILITY, AND TO PREVENT SETTLEMENT OR DISPLACEMENT OF TRENCH BACKFILL AS A RESULT OF THE PLACEMENT OF THE DIVERSION.
- ONCE SOIL IS EXPOSED FOR A DIVERSION CHANNEL, IT SHOULD BE IMMEDIATELY SHAPED, GRADED AND STABILIZED. THE DIKE SHOULD BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
- TEMPORARY OR PERMANENT SEEDING AND MULCH SHOULD BE APPLIED TO THE DIKE IMMEDIATELY FOLLOWING ITS CONSTRUCTION.
- DIVERSIONS MUST BE COMPLETELY STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- WHERE VEGETATION IS USED FOR STABILIZATION, DISTURBED AREAS SHOULD BE ESTABLISHED TO GRASS IMMEDIATELY AFTER CONSTRUCTION. SEEDBED PREPARATION, SEEDING, FERTILIZING, AND MULCHING SHOULD COMPLY WITH TEMPORARY VEGETATION AND PERMANENT VEGETATION PRACTICES DESCRIBED IN THE NEW HAMPSHIRE STORMWATER MANUAL.
- IF THE SOILS OR WINTER CONDITIONS PRECLUDE THE USE OF VEGETATION AND PROTECTION IS NEEDED, NONVEGETATIVE MEANS, SUCH AS EROSION CONTROL MATS OR A GRADED STONE LINING MAY BE USED.
- EACH DIVERSION MUST HAVE AN ADEQUATE OUTLET. THE OUTLET MUST CONVEY RUNOFF TO A POINT WHERE OUTFLOW WILL NOT CAUSE DAMAGE. THE OUTLET SHOULD BE INSTALLED AND STABILIZED BEFORE THE CONSTRUCTION OF THE DIVERSION.

SURFACE ROUGHENING

CONSIDERATIONS

- GRADED AREAS WITH SMOOTH, HARD SURFACES MAY BE INITIALLY ATTRACTIVE, BUT SUCH SURFACES INCREASE THE POTENTIAL FOR EROSION. A ROUGH, LOOSE SOIL SURFACE GIVES A MULCHING EFFECT THAT PROVIDES MORE FAVORABLE MOISTURE CONDITIONS THAN HARD, SMOOTH SURFACES; THIS AIDS SEED GERMINATION.
- METHODS FOR ACHIEVING A ROUGHENED SOIL SURFACE ON A SLOPE INCLUDE TRACKING, FURROWING, AND SERRATING (OR GROOVING). SELECTION OF THE METHOD IS BASED ON SLOPE STEEPNESS, MOWING REQUIREMENTS, AND WHETHER THE SLOPE IS FORMED BY CUTTING OR FILLING.

MAINTENANCE REQUIREMENTS

- ANY SIGN OF RILL OR GULLY EROSION SHOULD BE IMMEDIATELY INVESTIGATED AND REPAIRED AS NEEDED.
- PERIODICALLY INSPECT SEEDED SLOPES FOR RILLS OR OTHER SIGNS OF EROSION. FILL THESE AREAS SLIGHTLY ABOVE THE ORIGINAL GRADE, RESEED, AND MULCH AS SOON AS POSSIBLE, BUT NO MORE THAN 3 DAYS FOLLOWING INSPECTION.

SPECIFICATIONS

CUT SLOPE ROUGHENING:
- GROOVE THE SLOPE USING MACHINERY TO CREATE A SERIES OF RIDGES AND DEPRESSIONS THAT RUN ACROSS THE SLOPE, ON THE CONTOUR.

FILL SLOPE ROUGHENING:
- IN GENERAL, FILL SLOPES WITH A GRADIENT STEEPER THAN 3:1 SHOULD BE CONSTRUCTED IN LIFTS NOT TO EXCEED 12 INCHES, COMPACTING EACH LIFT. THE CONTRACTOR SHOULD REFER TO THE PROJECT GEOTECHNICAL REPORT FOR SPECIFIC GUIDANCE.
- THE FACE OF THE SLOPE SHOULD CONSIST OF LOOSE, UNCOMPACTED FILL 4-6 INCHES DEEP.
- USE GROOVING OR TRACKING TO ROUGHEN THE FACE OF THE SLOPES, IF NECESSARY.
- APPLY SEED, FERTILIZER AND STRAW MULCH, AND THEN TRACK OR PUNCH IN THE MULCH WITH THE BULLDOZER.
- DO NOT BLADE OR SCRAPE THE FINAL SLOPE FACE.

CUTS, FILLS, AND GRADED AREAS:
- MAKE MOWED SLOPES NO STEEPER THAN 3:1.
- ROUGHEN THESE AREAS TO SHALLOW GROOVES BY NORMAL TILLING, DISKING, OR HARROWING. THE FINAL PASS OF ANY SUCH TILLAGE SHOULD BE ON THE CONTOUR.
- MAKE GROOVES FORMED BY SUCH IMPLEMENTS CLOSE TOGETHER (LESS THAN 10 INCHES), AND NOT LESS THAN 1 INCH DEEP.
- EXCESSIVE ROUGHNESS IS UNDESIRABLE WHERE MOWING IS PLANNED.

ROUGHENING WITH TRACKED MACHINERY:
- LIMIT ROUGHENING WITH TRACKED MACHINERY TO SOILS WITH A SANDY TEXTURAL COMPONENT TO AVOID UNDUE COMPACTION OF THE SOIL SURFACE.
- OPERATE TRACKED MACHINERY UP AND DOWN THE SLOPE TO LEAVE HORIZONTAL DEPRESSIONS IN THE SOIL. DO NOT BACK-BLADE DURING THE FINAL GRADING OPERATION.
- IMMEDIATELY SEED AND MULCH ROUGHENED AREAS TO OBTAIN OPTIMUM SEED GERMINATION AND GROWTH.

DIVERSION CHANNEL SPECIFICATIONS	
DESIGN PARAMETER	CRITERIA
LOCATION	THE CONDITION OF THE OUTLET AREA, SITE TOPOGRAPHY, GROUND COVER, SOIL TYPE, AND LENGTH OF SLOPE SHOULD DETERMINE THE LOCATION OF THE DIVERSION.
DRAINAGE AREA	< 5 ACRES
CAPACITY	2-YEAR, 24 HOUR DESIGN STORM CONVEYANCE CAPACITY
DESIGN VELOCITY	2.5 TO 4.5 FEET/SEC, DEPENDING ON CHANNEL LINING
BERM/CHANNEL SIDE SLOPE	2:1 OR FLATTER
BERM TOP WIDTH	2 FEET, MINIMUM
TOTAL DEPTH TOP OF BERM TO BOTTOM OF CHANNEL	1.5 FEET MAXIMUM, EXCEPT FOR BERM OVERFILL OF APPROXIMATELY 10% OF BERM HEIGHT TO ALLOW FOR SETTLEMENT.
FREEBOARD	0.5 FEET MINIMUM
CHANNEL SHAPE	PARABOLIC OR TRAPEZOIDAL
STABILIZATION	VEGETATION OR RIPRAP
GRADIENT (ALONG FLOW PATH)	POSITIVE GRADE TO OUTLET. CHANNELS < 2% DO NOT REQUIRE STABILIZATION UNLESS EXCESSIVE EROSION IS OBSERVED DURING ROUTINE INSPECTION. CHANNELS > 2% SHOULD BE STABILIZED.
OUTLET	SEDIMENT LADEN WATER MUST BE DIVERTED INTO SEDIMENT TRAP OR SEDIMENT BASIN. RUNOFF FROM UNDISTURBED AREAS MUST DISCHARGE AT EITHER A NATURALLY STABLE OUTLET, OR A STABILIZED LEVEL SPREADER, APRON OR OTHER SUITABLE STRUCTURE.

DUST CONTROL

CONSIDERATIONS

- PHASE CONSTRUCTION AND SEQUENCE EARTH DISTURBANCE ACTIVITIES TO REDUCE THE AREA OF LAND DISTURBED AT ANY ONE TIME.
- MAINTAIN AS MUCH NATURAL VEGETATION AS IS PRACTICABLE.
- USE TRAFFIC CONTROL TO RESTRICT TRAFFIC TO PREDETERMINED ROUTES.
- USE TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, PERMANENT VEGETATIVE COVER, OR SODDING TO REDUCE THE NEED FOR DUST CONTROL.
- USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILDUP. STATIONARY SOURCES OF DUST (I.E., ROCK CRUSHERS) SHOULD UTILIZE FINE WATER SPRAYS TO CONTROL DUST.
- APPLY WATER, OR OTHER DUST INHIBITING AGENTS OR TACKIFIERS, AS APPROVED BY THE NHDES.

MAINTENANCE REQUIREMENTS

- WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

SPECIFICATIONS

WATER APPLICATION:
- MOISTEN EXPOSED SOIL SURFACES PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
- AVOID EXCESSIVE APPLICATION OF WATER THAT WOULD RESULT IN MOBILIZING SEDIMENT AND SUBSEQUENT DEPOSITION IN NATURAL WATERBODIES

STONE APPLICATION:
- COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.
- IN AREAS ADJACENT TO WATERWAYS, USE ONLY CHEMICALLY STABLE OR WASHED AGGREGATE.

OTHER COMMERCIAL PRODUCTS:
- THE USE OF OTHER COMMERCIAL PRODUCTS (I.E., TACKIFIERS) TO STABILIZE EXPOSED SURFACES FOR DUST CONTROL WILL BE SUBJECT TO ACCEPTANCE BY NHDES ON A PROJECT-SPECIFIC BASIS.

OTHER PRACTICES:
- APPLY OTHER TEMPORARY AND PERMANENT STABILIZATION PRACTICES AS SPECIFIED IN THE NEW HAMPSHIRE STORMWATER MANUAL.
- CALCIUM CHLORIDE CANNOT BE APPLIED IN WATERSHEDS WITH CHLORIDE-IMPAIRED WATERBODIES. ELSEWHERE, IT SHOULD ONLY BE USED WHEN OTHER METHODS ARE NOT PRACTICAL, AND FOLLOWING THESE GUIDELINES:
  - FOR DRY APPLICATION, USE A COMMERCIAL CHEMICAL PRODUCT THAT IS EITHER LOOSE DRY GRANULES OR FLAKES, FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP THE SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.
  - FOR LIQUID APPLICATIONS, THE APPLICATION RATE WILL VARY DEPENDING ON THE RELATIVE QUALITY OF MATERIALS IN A GIVEN ROAD SURFACE. SOME CALCIUM CHLORIDE SUPPLIERS MAY REQUIRE A ROAD SAMPLE BEFORE RECOMMENDING AN APPLICATION RATE. TYPICALLY, 30% CALCIUM CHLORIDE IS RECOMMENDED FOR MOST GRAVEL ROADS.

TEMPORARY EROSION CONTROL BLANKET

CONSIDERATIONS

EROSION CONTROL BLANKETS CAN BE APPLIED TO STEEP SLOPES, VEGETATED WATERWAYS, AND OTHER AREAS SENSITIVE TO EROSION, TO SUPPLEMENT VEGETATION DURING INITIAL ESTABLISHMENT AND HELP PROVIDE FOR SAFE CONVEYANCE OF RUNOFF OVER THE PROTECTED SURFACE.
- DURING THE GROWING SEASON (APRIL 15 - SEPTEMBER 15) USE MATS (OR MULCH AND NETTING) ON:
  - THE BASE OF GRASSED WATERWAYS
  - STEEP SLOPES (15% OR GREATER)
  - ANY DISTURBED SOIL WITHIN 100 FEET OF LAKES, STREAMS AND WETLANDS
- DURING THE LATE FALL AND WINTER (SEPTEMBER 15 - APRIL 15) USE HEAVY GRADE MATS ON ALL AREAS NOTED ABOVE PLUS USE LIGHTER GRADE MATS (OR MULCH AND NETTING) ON:
  - SIDE SLOPES OF GRASSED WATERWAYS
  - MODERATE SLOPES (GREATER THAN 8%) THERE MAY BE CASES WHERE MATS WILL BE NEEDED ON SLOPES FLATTER THAN 8%, DEPENDING ON SITE CONDITIONS AND THE LENGTH OF THE SLOPE.
- THE MOST CRITICAL ASPECT OF INSTALLING MATS IS OBTAINING FIRM CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL. WITHOUT SUCH CONTACT, THE MAT IS USELESS AND EROSION OCCURS.
- INSTALL MATS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- THE DESIGNER MUST EXERCISE CARE TO CHOOSE THE TYPE OF BLANKET OR MATTING WHICH IS APPROPRIATE FOR THE SPECIFIC OBJECTIVES AND SITE CONDITIONS OF THE PROJECT. THERE ARE MANY SOIL STABILIZATION PRODUCTS AVAILABLE, AND A THOROUGH REVIEW BY AN ENGINEER OR EROSION CONTROL PROFESSIONAL IS NECESSARY TO EVALUATE THE ADVANTAGES, DISADVANTAGES, AND CONSTRUCTION REQUIREMENTS OF THE MANUFACTURED PRODUCTS, AND TO SELECT AND SPECIFY A PRODUCT FOR A PARTICULAR APPLICATION.

MAINTENANCE REQUIREMENTS

- ALL BLANKETS AND MATS SHOULD BE INSPECTED WEEKLY DURING THE CONSTRUCTION PERIOD, AND AFTER ANY RAINFALL EVENT EXCEEDING ½ INCH IN A 24-HOUR PERIOD.
- ANY FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUT OF THE SLOPE, DISPLACEMENT OF THE MAT, OR DAMAGE TO THE MAT OCCURS, THE AFFECTED SLOPE SHALL BE REPAIRED AND RESEEDED, AND THE AFFECTED AREA OF MAT SHALL BE RE-INSTALLED OR REPLACED.

SPECIFICATIONS

SITE PREPARATION:
- PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.
- GRADE AND SHAPE AREA OF INSTALLATION.*
- REMOVE ALL ROCKS, CLODS, TRASH, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS WILL HAVE DIRECT CONTACT WITH THE SOIL.
- PREPARE SEEDBED BY LOOSENING 2-3 INCHES OF TOPSOIL ABOVE FINAL GRADE.
- INCORPORATE AMENDMENTS, SUCH AS LIME AND FERTILIZER, INTO SOIL ACCORDING TO SOIL TEST AND THE SEEDING PLAN.

SEEDING:
- SEED AREA BEFORE BLANKET INSTALLATION FOR EROSION CONTROL AND REVEGETATION. SEEDING AFTER MAT INSTALLATION IS OFTEN SPECIFIED FOR TURF REINFORCEMENT APPLICATION. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOTS AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEEDED.

WHERE SOIL FILLING IS SPECIFIED, SEED THE MATTING AND THE ENTIRE DISTURBED AREA AFTER INSTALLATION AND PRIOR TO FILLING THE MAT WITH SOIL.

INSTALLING AND ANCHORING BLANKETS:
- **BLANKETS SHALL BE INSTALLED AND ANCHORED PER THE MANUFACTURER'S SPECIFICATIONS. IF THE MANUFACTURER'S INSTRUCTIONS DIFFER FROM THOSE LISTED BELOW, THE MANUFACTURER'S INSTRUCTIONS SHOULD BE FOLLOWED.**
- BLANKETS SHALL BE PLACED WITHIN 24 HOURS AFTER SOWING SEED IN THAT AREA.
- U-SHAPED WIRE STAPLES, METAL GEOTEXTILE STAKE PINS, OR TRIANGULAR WOODEN STAKES CAN BE USED TO ANCHOR MATS TO THE GROUND SURFACE.
  - WIRE STAPLES SHOULD BE A MINIMUM GAUGE AS SPECIFIED BY THE MANUFACTURER.
  - METAL STAKE PINS SHOULD BE 3/16-INCH DIAMETER STEEL WITH A 1 1/2 INCH STEEL WASHER AT THE HEAD OF THE PIN, OR AS SPECIFIED BY THE MANUFACTURER.
- WIRE STAPLES AND METAL STAKES SHOULD BE DRIVEN FLUSH TO THE SOIL SURFACE. ALL ANCHORS SHOULD HAVE SUFFICIENT GROUND PENETRATION TO RESIST PULLOUT. LONGER ANCHORS MAY BE REQUIRED FOR LOOSE SOILS.

INSTALLATION ON SLOPES:
- **BLANKETS SHALL BE INSTALLED ON SLOPES PER THE MANUFACTURER'S SPECIFICATIONS. IF THE MANUFACTURER'S INSTRUCTIONS DIFFER FROM THOSE LISTED BELOW, THE MANUFACTURER'S INSTRUCTIONS SHOULD BE FOLLOWED.**
- BLANKETS SHALL BE LAID LOOSELY OVER THE SOILS, MAINTAINING CONTACT WITH THE SOIL, AND NOT STRETCHED.
- BLANKETS SHALL BE ANCHORED AT THE TOP OF THE SLOPE IN A TRENCH TO PREVENT RUNOFF FROM UNDERMINING THE MAT. SUBSEQUENT MATS SHOULD BE OVERLAPPED BY THE UPSLOPE MAT. BACKFILL TRENCH AND TAMP EARTH FIRMLY.
- BLANKETS SHALL BE UNROLLED IN THE DIRECTION OF THE WATER FLOW, OVERLAPPING THE EDGES BY A MINIMUM OF 4 INCHES AND STAPLING THE EDGES, AS DIRECTED BY THE MANUFACTURER.
- WHEN BLANKETS MUST BE SPLICED, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH 6-INCH MINIMUM OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12 INCHES APART, OR AS SPECIFIED BY MANUFACTURER.
- LAY BLANKETS LOOSELY AND MAINTAIN DIRECT CONTACT WITH THE SOIL - DO NOT STRETCH.
- BLANKETS SHALL BE STAPLED SUFFICIENTLY TO ANCHOR BLANKET AND MAINTAIN CONTACT WITH THE SOIL. STAPLES SHALL BE PLACED DOWN THE CENTER AND STAGGERED WITH THE STAPLES PLACED ALONG THE EDGES. STAPLING PATTERN AND NUMBER OF STAPLES WILL DEPEND ON STEEPNESS OF SLOPE AND MANUFACTURER'S ANCHORING METHODS; FOLLOW MANUFACTURER'S INSTRUCTIONS.

INSTALLATION IN CHANNELS:
- **BLANKETS SHALL BE INSTALLED IN CHANNELS PER THE MANUFACTURER'S SPECIFICATIONS. IF THE MANUFACTURER'S INSTRUCTIONS DIFFER FROM THOSE LISTED BELOW, THE MANUFACTURER'S INSTRUCTIONS SHOULD BE FOLLOWED.**
- DIG INITIAL ANCHOR TRENCH ACROSS THE CHANNEL AT THE LOWER END OF THE PROJECT AREA.
- EXCAVATE INTERMITTENT CHECK SLOTS, ACROSS THE CHANNEL AT 25-30 FOOT INTERVALS ALONG THE CHANNEL, OR AS SPECIFIED BY MANUFACTURER.
- CUT LONGITUDINAL CHANNEL ANCHOR SLOTS ALONG EACH SIDE OF THE INSTALLATION TO BURY EDGES OF MATTING. WHENEVER POSSIBLE EXTEND MATTING 2-3 INCHES ABOVE THE CREST OF CHANNEL SIDE SLOPES.
- BEGINNING AT THE DOWNSTREAM END AND IN THE CENTER OF THE CHANNEL, PLACE THE INITIAL END OF THE FIRST ROLL IN THE ANCHOR TRENCH AND SECURE WITH FASTENING DEVICES, AS DIRECTED BY THE MANUFACTURER. NOTE: MATTING WILL INITIALLY BE UPSIDE DOWN IN ANCHOR TRENCH.
- IN THE SAME MANNER, POSITION ADJACENT ROLLS IN ANCHOR TRENCH, OVERLAPPING THE PRECEDING ROLL A MINIMUM OF 3 INCHES.
- SECURE THESE INITIAL ENDS OF MATS WITH ANCHORS AT MANUFACTURER'S SPECIFIED INTERVALS, BACKFILL AND COMPACT SOIL.
- UNROLL CENTER STRIP OF MATTING UPSTREAM. STOP AT NEXT CHECK SLOT OR TERMINAL ANCHOR TRENCH.
- UNROLL ADJACENT MATS UPSTREAM IN SIMILAR FASHION, MAINTAINING A 3-INCH MINIMUM OVERLAP.
- FOLD AND SECURE ALL ROLLS OF MATTING SNUGLY INTO ALL TRANSVERSE CHECK SLOTS. LAY MAT IN THE BOTTOM OF THE SLOT THEN FOLD BACK AGAINST TINSELF. ANCHOR THROUGH BOTH LAYERS OF MAT AT MANUFACTURER'S SPECIFIED INTERVALS, THEN BACKFILL AND COMPACT SOIL. CONTINUE ROLLING ALL MAT WIDTHS UPSTREAM TO THE NEXT CHECK SLOT OR TERMINAL ANCHOR TRENCH.
- ALTERNATE METHOD FOR NONCRITICAL INSTALLATIONS: PLACE TWO ROWS OF ANCHORS ON 6-INCH CENTERS AT 25-30 FEET INTERVALS IN LIEU OF EXCAVATED CHECK SLOTS.
- SHINGLE-LAP SPLICED ENDS BY A MINIMUM OF 1 FOOT WITH UPSTREAM MAT ON TOP TO PREVENT UPLIFTING BY WATER OR BEGIN NEW ROLLS IN A CHECK SLOT. ANCHOR OVERLAPPED AREA BY PLACING TWO ROWS OF ANCHORS, 1 FOOT APART ON 1-FOOT INTERVALS.
- PLACE EDGES OF OUTSIDE MATS IN PREVIOUSLY EXCAVATED LONGITUDINAL SLOTS, ANCHOR USING PRESCRIBED STAPLE PATTERN, BACKFILL AND COMPACT SOIL.
- ANCHOR, FILL AND COMPACT UPSTREAM END OF MAT IN A TERMINAL TRENCH, AS DIRECTED BY MANUFACTURER.
- SECURE MAT TO GROUND SURFACE USING U-SHAPED WIRE STAPLES, GEOTEXTILE PINS, WOODEN STAKES, OR OTHER ANCHORS AS RECOMMENDED BY THE MANUFACTURER.

ANTHONY T. COSTELLO No. 10020 LICENSED PROFESSIONAL ENGINEER — STATE OF NEW HAMPSHIRE

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NO.	DATE	DESCRIPTION	BY

APPLICANT: Goldeneye Properties, LLC, 50 Temple Street ~ Suite 304, Nashua, N.H. 03060

OWNER: Patricia K. King, 524 South Main Street, Manchester, N.H. 03102, Rock 6344 / Page 1408

EROSION CONTROL SPECIFICATIONS 2
Town House
Tax Map 796 / Lot 12
South Mammoth Road, Manchester ~ N.H.

DATE: 11/8/22

DWG: 2244~BASE

BALE INSTALLATION

SHEET FLOW APPLICATIONS

1. EXCAVATE A 4 INCH DEEP TRENCH THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER. THE BARRIER SHOULD FOLLOW THE SLOPE CONTOUR. IF THE BARRIER IS AT THE TOE OF A SLOPE, PLACE IT 5 TO 6 FEET AWAY FROM THE SLOPE, IF POSSIBLE. THIS PLACEMENT WILL PROVIDE ACCESS FOR MAINTENANCE AND ALLOW COARSE SEDIMENT TO DROP OUT OF SUSPENSION BEFORE IT REACHES THE BARRIER.
2. PLACE BALES IN THE TRENCH WITH THEIR ENDS TIGHTLY ABUTTING. CORNER ABUTMENT IS NOT ACCEPTABLE. A TIGHT FIT IS IMPORTANT TO PREVENT SEDIMENT FROM ESCAPING THROUGH THE SPACES BETWEEN THE BALES.
3. ALL BALES MUST BE EITHER WIRE-BOUND OR STRING-TIED. INSTALL BALES SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. IF THE BINDING IS PLACED IN CONTACT WITH THE SOIL, IT WILL SOON DISINTEGRATE AND CAUSE THE BALE TO FALL APART. NOTE: STRAW BALES SHOULD BE USED, NOT HAY BALES.
4. SECURELY ANCHOR EACH BALE BY DRIVING AT LEAST TWO STAKES THROUGH THE BALE. DRIVE THE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. DRIVE THE STAKES AT LEAST 1 1/2 FEET INTO THE GROUND. WOOD STAKES, 2 BY 2 INCHES BY 4 FEET ARE BEST. REBAR CAN ALSO BE USED AS STAKES, BUT ARE NOT RECOMMENDED BECAUSE THEY CAN POSE HAZARD TO EQUIPMENT WHEN THE BALES DISINTEGRATE.
5. FILL ANY GAPS BETWEEN BALES BY WEDGING LOOSE STRAW BETWEEN THE BALES. LOOSE STRAW SCATTERED OVER THE AREA IMMEDIATELY UPHILL FROM A STRAW BALE BARRIER TENDS TO INCREASE BARRIER EFFICIENCY, AS IT IS PICKED UP BY RUNOFF AND TRANSPORTED TO HOLES IN THE BARRIER, WHICH IT TENDS TO SEAL.
6. BACKFILL THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT IT. THE BACKFILL SOIL SHOULD CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE OF THE BARRIER AND SHOULD BE BUILT UP TO 4 INCHES ABOVE THE GROUND ON THE UPHILL SIDE OF THE BALES.
7. INSPECT AND REPAIR OR REPLACE DAMAGED BALES PROMPTLY. STRAW BALES TYPICALLY DETERIORATE WITHIN THREE MONTHS WHEN WET. REMOVE THE STRAW BALES WHEN THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

CHANNEL FLOW APPLICATIONS

1. EXCAVATE A 4 INCH DEEP TRENCH THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER. PLACE BALES IN A SINGLE ROW, LENGTHWISE, ORIENTED PERPENDICULAR TO THE FLOW, AND WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
2. PLACE BALES IN THE TRENCH WITH THEIR ENDS TIGHTLY ABUTTING. CORNER ABUTMENT IS NOT ACCEPTABLE. A TIGHT FIT IS IMPORTANT TO PREVENT SEDIMENT FROM ESCAPING THROUGH THE SPACES BETWEEN THE BALES. EXTEND THE BARRIER TO SUCH A LENGTH THAT THE BOTTOM OF THE END BALES ARE AT A HIGHER ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE TO ASSURE THAT SEDIMENT-LADEN RUN-OFF WILL FLOW EITHER THROUGH OR OVER THE BARRIER BUT NOT AROUND IT. ROCK PLACED BELOW THE MIDDLE BALE WILL DISSIPATE THE ENERGY OF THE FALLING WATER AND REDUCE DOWNSTREAM EROSION.
3. ALL BALES MUST BE EITHER WIRE-BOUND OR STRING-TIED. INSTALL BALES SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. IF THE BINDING IS PLACED IN CONTACT WITH THE SOIL, IT WILL SOON DISINTEGRATE AND CAUSE THE BALE TO FALL APART.
NOTE: STRAW BALES SHOULD BE USED, NOT HAY BALES.
4. SECURELY ANCHOR EACH BALE BY DRIVING AT LEAST TWO STAKES THROUGH THE BALE. DRIVE THE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. DRIVE THE STAKES AT LEAST 1 1/2 FEET INTO THE GROUND. WOOD STAKES, 2 BY 2 INCHES BY 4 FEET ARE BEST. REBAR CAN ALSO BE USED AS STAKES, BUT ARE NOT RECOMMENDED BECAUSE THEY CAN POSE HAZARD TO EQUIPMENT WHEN THE BALES DISINTIGRATE.
5. FILL ANY GAPS BETWEEN BALES BY WEDGING LOOSE STRAW BETWEEN THE BALES. LOOSE STRAW SCATTERED OVER THE AREA IMMEDIATELY UPHILL FROM A STRAW BALE BARRIER TENDS TO INCREASE BARRIER EFFICIENCY, IT IS PICKED UP BY RUNOFF AND TRANSPORTED TO HOLES IN THE BARRIER, WHICH IT TENDS TO SEAL.
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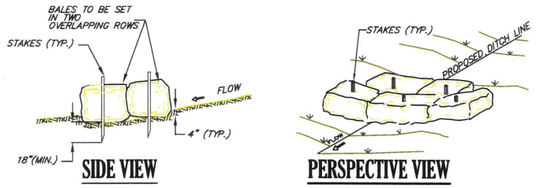
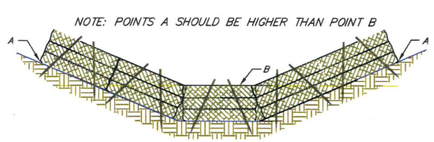
7. INSPECT AND REPAIR OR REPLACE DAMAGED BALES PROMPTLY. STRAW BALES TYPICALLY DETERIORATE WITHIN THREE MONTHS WHEN WET. REMOVE THE STRAW BALES WHEN THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.



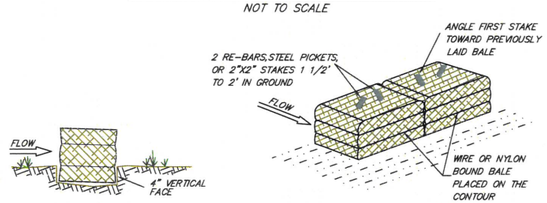
SIDE VIEW — PERSPECTIVE VIEW



PLACE HAYBALES EVERY 150' IN ROADSIDE DITCHES AND EVERY 100' IN DRAINAGE OUTLET DITCHES

DETAIL OF BALE CHANNEL BARRIER

NOT TO SCALE



EMBEDDING DETAIL — NOT TO SCALE

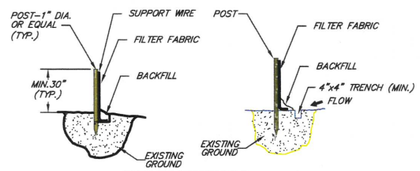
HAY BALE BARRIER ANCHORING DETAIL

SILT FENCE CONSTRUCTION SPECIFICATIONS

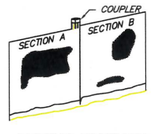
1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID SECTION AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED.
6. FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BULGES IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.

MAINTENANCE

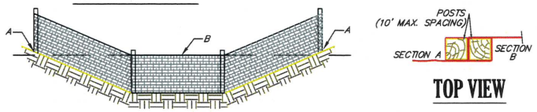
1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
4. SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.



TOE-IN METHODS



JOINING SECTIONS



NOTE: POINTS A SHOULD BE HIGHER THAN POINT B SILT FENCE THROUGH SMALL SWALE

TOP VIEW

SILT FENCE DETAILS

NOT TO SCALE

STONE FILL SPECIFICATIONS

1. THIS WORK SHALL CONSIST OF FURNISHING AND PLACING A DENSE STONE FILL AT THE LOCATIONS SHOWN THE PLANS OR ORDERED.
2. STONE FOR STONE FILL SHALL BE APPROVED QUARRY STONE, OR BROKEN OF A HARD, SOUND & DURABLE QUALITY. THE STONES & SPALLS SHALL BE SO GRADED AS TO PRODUCE A DENSE FILL WITH A MINIMUM OF VOIDS.
3. CLASS A STONE SHALL BE IRREGULAR IN SHAPE WITH APPROXIMATELY 50% OF THE MASS HAVING A MINIMUM VOLUME OF 12 CF, APPROXIMATELY 30% OF THE MASS RANGING BETWEEN 3 & 12 CF, APPROXIMATELY 10% OF THE MASS RANGING BETWEEN 1 & 3 CF, AND THE REMAINDER OF THE MASS COMPOSED OF SPALLS.
4. CLASS B STONE SHALL BE IRREGULAR IN SHAPE WITH APPROXIMATELY 50% OF THE MASS HAVING A MINIMUM VOLUME OF 3 CF, APPROXIMATELY 40% OF THE MASS RANGING BETWEEN 1 & 3 CF, AND THE REMAINDER OF THE MASS COMPOSED OF SPALLS.
5. CLASS C STONE SHALL CONSIST OF CLEAN, DURABLE FRAGMENTS OF LEDGE ROCK OF UNIFORM QUALITY, REASONABLY FREE FROM THIN OR ELONGATED PIECES. THE STONE SHALL BE MADE FROM ROCK WHICH IS FREE FROM TOPSOIL AND OTHER ORGANIC MATERIAL. THE STONES SHALL BE GRADED AS FOLLOWS:

SIEVE SIZE	% PASSING BY WEIGHT
12 INCH	100
4 INCH	50-90
1-1/2 INCH	0-30
3/4 INCH	0-10

6. CLASS D STONE SHALL CONFORM TO SECTION 520.2.2.3 OF THE 2016 NHDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, TABLE 3 - COARSE AGGREGATE, STANDARD STONE SIZE NO. 467.
7. SPALLS FOR FILLING VOIDS SHALL BE STONES OR BROKEN ROCK RANGING FROM A MAXIMUM SIZE OF 1 CF.
8. GRAVEL BLANKET MATERIAL SHALL CONFORM TO SECTION 209.2.1.2 OF THE 2016 NHDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.
9. GEOTEXTILE SHALL CONFORM TO SECTION 593 OF THE 2016 NHDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.
10. STONES AND SPALLS FOR STONE FILL SHALL BE DEPOSITED AND GRADED TO ELIMINATE VOIDS AND OBTAIN A DENSE MASS THROUGHOUT THE COURSE. THE SPALLS SHALL BE TAMPED INTO PLACE USING AN EQUIPMENT BUCKET OR OTHER APPROVED METHOD.
11. WHEN STONE FILL IS PLACED ON A SLOPE, THE STONES SHALL BE DEPOSITED IN SUCH A MANNER AS TO NOT UNNECESSARILY DISLODGE THE UNDERLYING MATERIAL.
12. WHEN GRAVEL BLANKET IS SHOWN, THE GRAVEL SHALL BE PLACED IN LAYERS NOT EXCEEDING 12" IN DEPTH UNLESS OTHERWISE ORDERED.
13. THE COMPLETED SURFACE SHALL APPROXIMATE THE LINES AND GRADES SHOWN OR ORDERED. WHEN ORDERED, STONE PLACED OVER 1 FT OUTSIDE OR ABOVE SUCH LINES AND GRADES SHALL BE REMOVED.

WINTER CONSTRUCTION NOTES

1. 1) ALL PROPOSED POST DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. 2) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. 3) AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGHOUT THE WINTER SEASON, SHALL BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

CONSTRUCTION PHASING

CONSIDERATIONS

- CONSTRUCTION PHASING OF LAND GRADING ACTIVITIES MUST BE CAREFULLY PLANNED AND CARRIED OUT TO PREVENT EROSION AND SEDIMENTATION.
- PLAN EARTH DISTURBANCE AND GRADING ACTIVITIES TO MINIMIZE THE AREA OF SOIL EXPOSED AT ONE TIME, AS WELL AS THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING.
- PROTECT EXISTING VEGETATION AND NATURAL FOREST COVER, DESIGNATED TO REMAIN ON THE SITE.
- PRESERVE AND MAINTAIN BUFFER STRIPS OF UNDISTURBED VEGETATION BETWEEN CONSTRUCTION AREAS AND ENVIRONMENTALLY VULNERABLE AREAS SUCH AS WATERCOURSES, PONDS, AND WETLANDS.
- DIVERT CLEAN WATER AWAY FROM THE IMMEDIATE CONSTRUCTION AREA TO REDUCE THE THREAT OF EROSION
- DISPERSE CLEAN STORMWATER TO UNDISTURBED, VEGETATED, FLAT OR MODERATE-SLOPED, SURFACES WHEREVER POSSIBLE, RATHER THAN CONCENTRATE IT INTO CHANNELS.
- FALL AND WINTER EROSION CONTROL MEASURES MUST BE UPGRADED AND REFINED TO PROTECT THE SITE FROM SPRING RUNOFF AND SNOWMELT

MAINTENANCE REQUIREMENTS

- ANY SIGN OF RILL OR GULLY EROSION SHOULD BE IMMEDIATELY INVESTIGATED AND REPAIRED AS NEEDED.
- TEMPORARY STABILIZATION MEASURES SHOULD BE INSPECTED AT LEAST ONCE PER WEEK DURING THE CONSTRUCTION PERIOD, OR AS STIPULATED BY THE APPLICABLE PERMITS, UNTIL ALL EXPOSED SOILS HAVE BEEN PERMANENTLY STABILIZED.
- IN ADDITION TO REGULAR INSPECTIONS, THE PROJECT SITE SHOULD BE INSPECTED DURING OR WITHIN 24 HOURS OF ANY RAIN EVENT IN WHICH ½ INCH OF PRECIPITATION OR MORE FALLS WITHIN A 24-HOUR PERIOD.
- INSPECTIONS SHOULD BE DOCUMENTED IN A REPORT.

SPECIFICATIONS

- *TEMPORARY STABILIZATION:* ALL AREAS OF EXPOSED OR DISTURBED SOIL SHOULD BE TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS FROM THE TIME OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME IS SPECIFIED BY LOCAL AUTHORITIES, THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT, OR AN INDEPENDENT MONITOR.
- *PERMANENT STABILIZATION:* ALL AREAS OF EXPOSED OR DISTURBED SOIL SHOULD BE PERMANENTLY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 3 DAYS FOLLOWING FINAL GRADING.
- *MAXIMUM AREA OF DISTURBANCE:* THE AREA OF UNSTABILIZED SOIL SHOULD NOT EXCEED 5 ACRES AT ANY TIME UNLESS PROJECT PERMITS SPECIFICALLY PROVIDE FOR A GREATER AREA OF DISTURBANCE. ANY SUCH GREATER AREA OF DISTURBANCE REQUIRES, AS PART OF THE PERMITTING PROCESS:
  - DOCUMENTATION THAT THE REQUIRED AREAS OF EARTH CUTS AND FILLS ARE SUCH THAT AN AREA OF DISTURBANCE OF 5 ACRES OR LESS WOULD UNREASONABLY LIMIT THE CONSTRUCTION SCHEDULE;
  - AN APPROVED CONSTRUCTION SEQUENCE PLAN, DEVELOPED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NEW HAMPSHIRE OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL AS CERTIFIED BY THE CPESC COUNCIL OF ENVIROCERT INTERNATIONAL, INC.; AND
  - EMPLOYMENT OR RETAINMENT OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NEW HAMPSHIRE OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL AS CERTIFIED BY THE CPESC COUNCIL OF ENVIROCERT INTERNATIONAL, INC. TO SERVE AS AN ENVIRONMENTAL MONITOR DURING CONSTRUCTION.
- ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION. FLAG OR OTHERWISE DELINEATE AREAS NOT TO BE DISTURBED. EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION.
- ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHOULD BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH AN APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES AND MEASURES SHOULD BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHOULD BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING AND PROTECTED FROM EROSION.
- STOCKPILES, BORROW AREAS AND SPOILS SHOULD BE STABILIZED AS DESCRIBED UNDER "SOIL STOCKPILE PRACTICES."
- SLOPES SHOULD NOT BE CREATED SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTIES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGES.
- AREAS TO BE FILLED SHOULD BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS.
- AREAS SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. TOPSOIL SHOULD BE PLACED WITHOUT SIGNIFICANT COMPACTION TO PROVIDE A LOOSE BEDDING FOR PLACEMENT OF SEED.
- ALL FILLS SHOULD BE COMPACTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, SITE UTILITIES, CONDUITS, AND OTHER FACILITIES, SHOULD BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- IN GENERAL, FILLS SHOULD BE PLACED AND COMPACTED IN LAYERS RANGING FROM 6 TO 24 INCHES IN THICKNESS. THE CONTRACTOR SHOULD REVIEW THE PROJECT GEOTECHNICAL REPORT FOR SPECIFIC GUIDANCE. FILL MATERIAL SHOULD BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, FROZEN MATERIAL AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.
- FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS ARE SUSCEPTIBLE TO ACCELERATED SETTLEMENT AND POTENTIAL ACCELERATED EROSION. WORK IN THESE MATERIALS SHOULD BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.
- THE OUTER FACE OF THE FILL SLOPE SHOULD BE ALLOWED TO STAY LOOSE, NOT ROLLED, COMPACTED, OR BLADED SMOOTH. A BULLDOZER MAY RUN UP AND DOWN THE FILL SLOPE SO THE DOZER TREADS (CLEAT TRACKS) CREATE GROOVES PERPENDICULAR TO THE SLOPE. IF THE SOIL IS NOT TOO MOIST, EXCESSIVE COMPACTION WILL NOT OCCUR. SEE "SURFACE ROUGHENING."
- ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION, AND FACILITATE VEGETATION ESTABLISHMENT.
- USE SLOPE BREAKS, SUCH AS DIVERSIONS, BENCHES, OR CONTOUR FURROWS AS APPROPRIATE, TO REDUCE THE LENGTH OF CUT-AND-FILL SLOPES TO LIMIT SHEET AND RILL EROSION AND PREVENT GULLY EROSION. ALL BENCHES SHOULD BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHOULD BE EVALUATED BY A PROFESSIONAL ENGINEER TO DETERMINE IF THE PROPOSED DESIGN SHOULD BE REVISED TO PROPERLY MANAGE THE CONDITION.
- STABILIZE ALL GRADED AREAS WITH VEGETATION, CRUSHED STONE, COMPOST BLANKET, OR OTHER GROUND COVER AS SOON AS GRADING IS COMPLETED OR IF WORK IS INTERRUPTED FOR 21 WORKING DAYS OR MORE. USE MULCH OR OTHER APPROVED METHODS TO STABILIZE AREAS TEMPORARILY WHERE FINAL GRADING MUST BE DELAYED.
- ALL GRADED AREAS SHOULD BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

CONSTRUCTION SEQUENCE

1. CUT AND CLEAR TREES ONLY TO LIMITS OF CUT/FILL SLOPES.
2. CONSTRUCT TEMPORARY SEDIMENT AND EROSION CONTROL FACILITIES. PERIMETER SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATIONS. REMOVE AND STOCKPILE LOAM ON-SITE FOR RE-USE ON-SITE. SEED AND MULCH STOCKPILE. SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUN OFF INTO THEM.
3. CLEAR, CUT AND DISPOSE OF DEBRIS, DISPOSAL OF DEBRIS SHALL MEET LOCAL, STATE AND FEDERAL REQUIREMENTS.
4. CONSTRUCT PONDS, SWALES AND DRAINAGE SYSTEMS.
5. CONSTRUCT BUILDING PAD AND PARKING AREAS. ROAD AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINAL GRADE.
6. BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE LOAMED, SEEDED AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINAL GRADE.
7. CONSTRUCT TEMPORARY DIVERSION CHANNELS, AS REQUIRED.
8. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DITCHES, SILT FENCES SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED.
9. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION MEASURES WEEKLY AND WITHIN 24 HOURS OF 0.5" OF RAINFALL.
10. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
11. REMOVE TEMPORARY EROSION CONTROL MEASURES.

* NO DISTURBED AREAS ARE TO BE LEFT UNSTABILIZED FOR LONGER THAN 21 DAYS
* ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE
* THE MAXIMUM AREA THAT MAY BE DISTURBED AND UNSTABILIZED IS 5 ACRES
* AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
  D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

**LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT occur UNTIL AFTER THE ROADWAY AND ASSOCIATED DRAINAGE HAVE BEEN COMPLETED AND STABILIZED.

STATE OF NEW HAMPSHIRE — ANTHONY T. COSTELLO No. 10020 LICENSED PROFESSIONAL ENGINEER

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NO.	DESCRIPTION	DATE	BY

APPLICANT: Goldeneye Properties, LLC, 30 Temple Street ~ Suite 504, Nashua, N.H. 03060

OWNER: Patricia K. King, 524 South Main Street, Manchester, N.H. 03102, Book 6344 / Page 1408

EROSION CONTROL SPECIFICATIONS 3

Town House

Tax Map 796 / Lot 12

South Mammoth Road, Manchester ~ N.H.

DATE: 11/8/22

DWG: 2244~BASE